SD 9
0
395
dex

Electronics Letters

VOLUME 4 1968

RECEIVED
JAN 23 1969
THE LIBRARY
KANSAS STATE UNIVERSITY

THE INSTITUTION OF ELECTRICAL ENGINEERS

Electronics Letters

THE INSTITUTION OF ELECTRICAL ENGINEERS Savoy Place, London WC2
Publishing Department: PO Box 8, Southgate House, Stevenage, Herts., England

UK EDITORS
P. J. B. Clarricoats (*London*)
E. A. Ash (*London*)

REGIONAL EDITORS
USA — J. R. Wait (*Boulder*)
FRANCE — P. A. Grivet (*Orsay*)
GERMANY — H. Döring (*Aachen*)

EDITORIAL BOARD

AUSTRALIA
E. G. Bowen (*Sydney*) A. E. Karbowiak (*Sydney*)

BELGIUM
A. E. A. J. G. Dorsimont (*Brussels*) J. Van Bladel (*Ghent*)

CANADA
R. E. Burgess (*Vancouver*) G. Sinclair (*Toronto*)

CZECHOSLOVAKIA
O. Klika (*Prague*)

FRANCE
P. Aigrain (*Paris*) M. Bernard (*Issy-les-Moulineaux*) B. Epsztein (*Orsay*)
J. C. Simon (*Orsay*)

GERMANY
U. Adelsberger (*Brunswick*) H. Severin (*Bochum*) H. te Gude (*Hamburg*)
R. Theile (*Munich*)

HUNGARY
G. Szigeti (*Budapest*)

INDIA
A. P. Mitra (*New Delhi*) C. P. Vasudevan (*New Delhi*)

ISRAEL
I. Cederbaum (*Haifa*)

ITALY
M. Boella (*Turin*) G. Toraldo di Francia (*Florence*)

JAPAN
A. Matsumoto (*Sapporo*) S. Okamura (*Tokyo*) I. Someya (*Tokyo*)

NETHERLANDS
H. B. G. Casimir (*Eindhoven*) H. Rinia (*Eindhoven*) A. E. Pannenborg (*Eindhoven*)

POLAND
W. Rosinski (*Warsaw*) A. K. Smoliński (*Warsaw*)

ROMANIA
G. Cartianu (*Bucharest*)

SWEDEN
B. Agdur (*Stockholm*)

SWITZERLAND
W. E. Gerber (*Bern*) A. P. Speiser (*Zürich*) M. J. O. Strutt (*Zürich*)

UAR
H. Mahmoud (*Cairo*)

UK
H. E. M. Barlow (*London*) R. L. F. Boyd (*London*) R. Carruthers (*Culham*) J. F. Coales (*Cambridge*)
A. L. Cullen (*London*) E. Eastwood (*Chelmsford*) L. Essen (*Teddington*) G. G. Gouriet (*London*)
Lord Jackson of Burnley (*London*) G. King (*Harlow*) J. Lamb (*Glasgow*) G. G. Macfarlane (*London*)
J. M. Meek (*Liverpool*) G. H. Metson (*London*) J. A. Ratcliffe (*Cambridge*) J. A. Saxton (*Slough*)
N. H. Searby (*Manchester*) R. A. Smith (*Edinburgh*) R. W. Sutton (*Baldock*) P. E. Trier (*Redhill*)
D. G. Tucker (*Birmingham*) F. C. Williams (*Manchester*)

USA
H. G. Booker (*San Diego*) H. J. Carlin (*Ithaca*) H. Chestnut (*Schenectady*) M. Chodorow (*Stanford*)
G. Goubau (*Fort Monmouth*) H. A. Haus (*Cambridge*) E. C. Jordan (*Urbana*) H. W. Leverenz
(*Princeton*) R. Levy (*Natick*) A. A. Oliner (*New York*) J. R. Pierce (*Murray Hill*) S. Silver (*Berkeley*)
M. I. Skolnik (*Washington*) E. G. Spencer (*Murray Hill*) F. J. Zucker (*Bedford*) V. K. Zworykin
(*New York*)

USSR
V. I. Siforov (*Moscow*)

Executive Editor: J. C. Cooper — *Graphics Manager:* M. C. Partridge

Secretary of the IEE: G. F. Gainsborough — *Director of Publishing, IEE:* W. G. Askew
Editor in Chief, IEE: J. D. St. Aubyn

ELECTRONICS LETTERS *is published fortnightly. Price 10s. per issue, annual subscription £10. Second-class postage paid at New York, NY*
All subscription orders and inquiries should be sent to: IEE, Savoy Place, London WC2. Telephone 01-240 1871, Telex 261176, Telegrams Voltampere London WC2. All other correspondence, including manuscripts and advertisement correspondence, should be sent to: IEE Publishing Department, PO Box 8, Southgate House, Stevenage, Herts., England. Telephone Stevenage 3311 (s.t.d. 0438 3311), Telex 261176, Telegrams Voltampere Stevenage

Electronics Letters

INDEX VOLUME 4 1968

A

A.C. voltage regulation by means of chopper circuits. A. Emanuel-Eigeles and J. Appelbaum 26
A.M.- and f.m.-noise characteristics of solid-state microwave oscillators. V. P. Kodali 147
Abdel-Latif, M., and Strutt M. J. O. Simple graphical method to determine line reflections between high-speed-logic integrated circuits 496
Absorption spectra in axially magnetised y.i.g. rods. B. Désormière 219
Abu-Zeid, M. M., Groendijk, H., and Willemse, A. Temperature-compensated f.e.t. multiplier 324
Accuracy of the Volterra-series method for nonlinear differential equations. M. Kielkiewicz 584
Ackroyd, M. H. Simplified quadrature network 105
Errata 142
Acoustic holograms. L. V. Skattebol 583
Acoustically amplifying CdS, negative resistance in, with an S type current/voltage characteristic. J. D. Maines and E. G. S. Paige 450
Acoustoelectric amplifiers, transducer for shear or longitudinal-wave. G. S. Kino 206
Acoustoelectric domains in InSb, helicon diagnostic of. F. Seifert 356
Acoustoelectric oscillations in piezoelectric semiconductors, circuit-controlled modes of. C. W. Turner and D. R. Bryson 270
Active circulators, directly coupled. J. M. Rollett and P. E. Greenaway 579
Active filters using a predistortion technique. B. Wise 25
Active networks, summed sensitivity of. A. G. J. Holt and J. K. Fidler 385
Active RC filters with differential integrators. D. Wolff 428
Active RC networks, summed sensitivity of. A. G. J. Holt and M. R. Lee 298
Active RC networks using a parallel T. N. Fujii 239
Active 2-ports, maximum available power gain of. S. Venkateswaran and P. S. Sarma 278
Errata 518
Adams, K. M., and Nouta, R. (See Nouta)
Adams, K. M., and Van Looij, H. Th. (See Van Looij)
Adjustment of the responses of reduced dynamical systems. J. H. Anderson 75
Admittance of an infinite cylindrical antenna with realistic gap field. R. A. Hurd and J. Jacobsen 420
Ahmed, K. U., and Holt, A. G. J. (See Holt)
Ahmed, N., and Rao, K. R. Evaluation of transient response 533
Ahmed, S. Finite-element method for waveguide problems 387
Aitchison, C. S. Possible Gunn-effect parametric amplifier 15
Aitken, J. E., and Sander, K. F. Transient neutral depletion in a constricted low-pressure mercury discharge measured by ultraviolet absorption 426
Akram-Husain, S., and Walsh., D. Field- and photon-enhanced field emission from thin-film field-emission devices 339
Albrow, R. C., and Aleksander, I. (See Aleksander)
Aleksander, I., and Albrow, R. C. Microcircuit learning nets: some tests with handwritten numerals 406
Aleksander, I., and Mamdani, E. H. Microcircuit learning nets: improved recognition by means of pattern feedback 425
Alford-loop counterpoise radiation patterns, effects of large parasitic loops on. D. L. Sen Gupta and J. E. Ferris 223
Algebraic and transcendental transmission lines, generalised patterns of nonuniformity for solvable. A. G. J. Holt and K. U. Ahmed 287
Errata 394
Algebraic relations between system response and system parameters for linear time-invariant systems. E. V. Bohn and B. Sarkar 159
Alison, W. B. W. Simplified procedure for the design of multisection Chebyshev quarter-wave transformers 331
Errata 423
Allpass sections, tunable active. A. G. J. Holt and J. P. Gray 37
Alternator excitation by gyrators and nonreciprocal networks, electronic control of. D. Midgley 101
Amplification, microwave, with GaAs avalanche diodes. H. J. Kuno, J. R. Collard and A. Gobat 540
Amplification using a transistor chopper, low-noise l.f. P. J. Baxandall 14
Amplifier, transistor, high-power radio frequency. P. Rohan, M. Viola, E. Templar and J. Wilcox 442
Amplifiers, bulk-negative mobility, transit-time effects in. D. Dascalu 581
Amplifiers employing junction f.e.t.s, conditions for optimum noise performance in l.f. K. F. Knott 92
Amplifiers, negative resistance, using three-terminal Gunn devices. F. P. Califano 568
Amplifiers, reduction of flicker noise in transistor. E. A. Faulkner and J. B. Grimbleby 80
Amplifying properties of bulk negative-resistance material. L. Lewin 145
Analogue-multiplier, temperature-compensated. P. Voldner and H. C. Ratz 130
Analytic test for absolute stability. D. Šiljak 358
Analytical optimisation of the cascade synthesis of distributed-RC networks for sharp cutoff. A. G. J. Holt and P. Bowron 350
Analogue memory element, m.o.s. W. D. Ryan and A. Reid 73
Anand, Y., and Goldman, M. Evaluation of i.f. impedance of the diode from d.c. analysis 179
Anderson, B. D. O. Time-weighted performance-index evaluation 174
Anderson, G. G., and Dutta Roy, S. C. Improving the transient-response characteristics of pulse filters with parabolic distribution of poles. 173
Anderson, J. H. Adjustment of the responses of reduced dynamical systems 75
Andrew, R., Love, W., and Loeb, H. W. (See Loeb)
Anomalous effects in a lithium-drifted germanium semiconductor detector. G. Walford and C. E. Doust 13
Antenna calculations, using the reciprocity theorem for. K. G. Balmain 301
Antenna in a warm plasma, current waves on an infinite cylindrical. D. T. Nguyen 94
Antenna, infinite cylindrical, with realistic gap field, admittance of an infinite. R. A. Hurd and J. Jacobsen 420
Antenna, insulated, input admittance of an, in a plasma medium. D. T. Nguyen 561
Antenna, linear, surface fields and near fields of a. J. Galejs 519
Antenna problems, solution of, by Fourier-series expansion. H. P. Nguyen 354
Antenna, resonantly h.f.-sustained plasma around an. A. M. Messiaen, P. E. Vandenplas and G. Peter 29
Antenna system, Cassegrain, aperture blockage by a subreflector in a. J. R. Pace 500
Antennas, aperture coupling in cylindrical dielectric-rod antennas. J. R. James 39
Antennas, coupled, in a dissipative medium. H. P. Nguyen 486
Antennas, linear, in a warm plasma driven from a coaxial air-filled transmission line. D. T. Nguyen 475
Antennas, medium-wave directional, low-power method of adjustment of. J. V. Surutka 150
Antennas, slot, covered by an overdense plasma sheath, coupling between mutually opthogonal. P. F. Sforza 243
Antoniou, A. New gyrator circuits obtained by using nullors 87
Antoniou, A. 3-terminal gyrator circuits using operational amplifiers 591
Antoniou, A. Stability properties of some gyrator circuits 510
Errata 574
Aperture blockage by a subreflector in a Cassegrain antenna system. J. R. Pace 500
Aperture-correction techniques, image restoration by. E. M. Deeley 534
Aperture coupling in cylindrical dielectric-rod antennas. J. R. James 39
Appelbaum, J. and Emanuel-Eigeles, A. (See Emanuel-Eigeles)
Application of frequency-domain stability criteria to certain nonlinear position control systems. R. W. McGee 536
Application of impedance measurements in an investigation of a waveguide thermistor mount. J. A. Lane 186
Application of the reverse emitter-base breakdown and saturation of silicon planar transistors. S. G. Johnson 109
Application of 2-dimensional solutions of the Shockley-Poisson equation to inversion-layer m.o.s.t. devices. H. W. Loeb, R. Andrew and W. Love 352
Arbitrary media, characterisation of, in fields. J. R. James 412
Arc static characteristic, improved mathematical representation of. R. E. Crosbie and A. K. Halder 330
Arrays, logical circuits for use in iterative. K. J. Dean 81
Errata 142
Ash, E. A., and St. Ledger, J. F. (See St. Ledger)
Asynchronous machines by semiconductor switches, symmetrical and asymmetrical stable modes in systems for electronic stator control of. J. D. Van Wyk 453
Errata 574
Atkinson, P., Davey, R. L., and Fellget, P. B. Bang-bang controller using pulse-duration modulation to provide a central linear region 105
Audeh, N. F., Wu. S. T., and Chang, F. C. (See Chang)
Autin, B., Trotel, J., and Dieulesaint, E. (See Trotel)
Autocorrelation function of a 4-level m sequence. P. A. N. Briggs and K. R. Godfrey 232
Autocorrelation function of the quantisation-error process for a sinusoid. J. B. Knowles and R. Edwards 180
Automatic identification of nonlinear static plant by degressive feedback and digital computer. Z. Bubnicki 235
Autonomous recurrence, Poincare's index for double points of a second-order. J. P. Babary, A. Giraud and C. Mira 90
Avalanche-diode oscillators, high efficiency operation of. R. A. Giblin 52
Avalanche-diode oscillators, modular approach to higher-power. F. Ivanek and V. G. K. Reddi 446
Avalanche diodes, GaAs, microwave amplification with. H. J. Kuno, J. R. Collard and A. Gobat 540
Avalanche diodes, Si, high-efficiency microwave oscillations from. M. I. Grace and G. Gibbons 564
Avalanche multiplication in silicon p-n abrupt junctions, numerical study of. J. Urgell 447
Avalanche-resonance pumped oscillators, experimental analysis of high-efficiency. C. P. Snapp, L. A. Stark and B. Hoefflinger 595

B

Babary, J. P., Giraud, A., and Mira, C. Indice de Poincaré de points doubles d'une recurrence autonome du deuxième ordre. (Poincare's index for double points of a second-order autonomous recurrence) 90
Bächtold, W., and Strutt, M. J. O. Optimum source admittance for minimum noise figure of microwave transistors 346
Bächtold, W., and Strutt, M. J. O. Simplified equivalent circuit for the noise-figure calculation of microwave transistors 209
Bacon, J. R., and Davis, L. E. (See Davis)
Bajon, J. Caracteristiques d'un dispositif électrométrique à varactor. (Characteristics of an electromagnetic amplifier using a varactor diode) 161
Balmain, K. G. Using the reciprocity theorem for antenna calculations 301
Bandler, J. W. Optimum noncommensurate stepped transmission-line transformers 212
Bandshape factor of a piezoelectric thin-film transducer. J. Trotel, E. Dieulesaint and B. Autin 156
Bang-bang controller using pulse-duration modulation to provide a central linear region. P. Atkinson, R. L. Davey and P. B. Fellget 105
Barker, H. A. Elimination of quadratic drift errors in system identification by pseudorandom binary signals 255
Barlow, H. M., and Şen, Mira. New experiments on the behaviour of the hybrid TEM-dual surface wave in a coaxial cable 523
Barlow, H. M. Electrical design requirements for low-loss high-frequency coaxial cables 469
Barlow, H. M. Possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in a coaxial cable having an electrically loaded inner conductor 153
Barlow, H. M. Possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in a coaxial cable having an electrically loaded inner conductor 185
Barney, G. C. Multivariable function generation using a hybrid computer 419
Barrett, R., and Karran, J. Correlation-multiplex data-transmission system 538
Errata 604
Bass, J. C., Eddolls, D. V., and Knibb, T. F. Microwave-biased photodetector system with an integral Gunn-effect oscillator 429
Batchelor, B. G., and Wilkins, B. R. Error-correcting algorithm for adapting a hyperelliptical decision surface for pattern recognition 204

Errata 300

Bates, R. H. T., and Jamieson, A R. Towards reducing errors in radar measurement of Faraday rotation 155

Bava, G. P. General form of the reciprocity relationship for bianisotropic media 299

Baxandall, P. J. Low-noise l.f. amplification using a transistor chopper 14

Baynham, A. C., Boardman, A. D., and Tierney, J. Space harmonics in a drifted solid-state plasma 484

Beal, J. C., and Dewar, W. J. Coaxial-slot surface-wave launcher 557

Beam shaping for optimum illumination patterns. S. Cornbleet 502

Beccari, C. Interpolation of the ω axis 139

Beck, M. S. Learning method for identification of process dynamics 64

Becklake, E. J. S., Cram, L. A., and Prewer, B. E. Spectral response of a point-contact diode in the submillimetre range 601

Beesley, M. J., Foster, H., and Hambleton, K. G. Holographic projection of microcircuit patterns 49

Beg, S., and Salvage, B. Discharge repetition in an air-filled cavity in polythene under high direct electric stresses 530

Behaviour of separation constants for finite gyromagnetic plasmas. V. Bevc 58

Bevc, V. Behaviour of separation constants for finite gyromagnetic plasmas 58

Bianisotropic media, general form of the reciprocity relationship for. G. P. Bava 299

Bickart, T. A., and Krikorian, J. S., Jun. (See Krikorian)

Binary division using a data-dependent iterative array. K. J. Dean 283

Binary functions, ternary maps for. D. H. Green and P. W. Foulk 343

Bipolar transistors, silicon planar, 1/f voltage noise in. K. F. Knott 555

Bispherical electrode system for dielectric testing, consequences of using the. J. E. Brignell 465

Biquard, F., Grivet, P., and Septier, A. Frequency stability of a monotron oscillator with superconducting cavity. 143

Bistatic radar techniques, use of, to improve resolution in the vertical plane. D. E. N. Davies 170

Bistatic scattering matrix for a finite right-circular cylinder. R. A. Ross, C. C. Freeny and J. C. Cleary 148

Blakey, J. R. Calculation of dielectric-aerial-radiation patterns 46

Blocking efficiency in shaped Cassegrain systems, optimising the. J. Dijk and E. J. Maanders 372

Bloss, W. H., Lohnert, G. H., and Schneider, R. T. Photoelectric restoring system for images degraded by atmospheric turbulence 292

Bløtekjaer, K. Waves in semiconductors with nonconstant mobility 357

Boardman, A. D., Tierney, J., and Baynham, A. C. (See Baynham)

Bohn, E. V., and Sarkar, B. Algebraic relations between system response and system parameters for linear time-invariant systems. 159

Bombi, F., and Ciscato, D. New class of magnitude/frequency convertors 453

Boronski, S. Parallel-fed c.w. Gunn oscillators cascaded in X band waveguide for higher microwave power 185

Bosch, B. G., and Pollmann, H. Continuously variable microwave attenuation with Gunn-effect samples 317

Bose, S. C., and Das, J. (See Das)

Bott, I. B., and Fawcett, W. Theoretical study of the effect of temperature on X band Gunn oscillators 207

Boudry, M. R. Computed transient solution for the m.s.m. diode with traps 193

Boundary-value problems, two point, in theories of space-charge conduction. G. G. Roberts and L. M. Marks 265

Bounds on magnitude of sensitivity to variations of component values of passive transfer-voltage ratios. G. Martinelli and M. Poggelli 98

Bourk, T. R., Kharadly, M. M. Z., and Lewis, J. E. Measurement of waveguide attenuation by resonance methods 267

Bowes, S. R., Stephenson, J. M., and Lawrenson, P. J. (See Lawrenson)

Bowron, P., and Holt, A. G. J. (See Holt)

Bradfield, G. Damping of surface (sound) waves by the air 95

Bradley, J., and Turriff, O. O. (See Turriff)

Braithwaite, D., and Kitai, R. (See Kitai)

Bramer, B., Croft, D. G., and Smith, R. B. (See Smith)

Brayshaw, G. S. Simplified topological solutions of networks containing nullators and norators 276
Errata 342

Briggs, P. A. N., and Godfrey, K. R. Autocorrelation function of a 4-level m sequence 232

Briggs, P. A. N., and Godfrey, K. R. New class of pseudorandom ternary sequences 438
Errata 518

Brignell, J. E., Buttle, A., and Constantinides A. G. (See Buttle)

Brignell, J. E. Consequences of using the bispherical electrode system for dielectric testing 465

Brignell, J. E. New results for time averages as statistical averages 113

Broadband excitation, efficient, of the n=0 surface magnetostatic waves in y. i. g. slab. P. Young 566

Brook, P., and Whitehead, C. S. Hyperabrupt junctions in Au-Si Schottky diodes by ion implantation 335

Brown, J., and Millington, G. High-frequency coaxial cables 135

Brown, R. F. Drift correlation in periodic crosscorrelation schemes 478

Brown, R. F. Practical study of drift correction in p. r. b. n. crosscorrelation 588

Brown, R. F. Reduction of order of linear state equations 416

Brundle, L. K., and Freedman, N. J. (See Freedman)

Brundle, L. K., and Freedman, N. J. Magnetostatic surface waves on a y. i. g. slab 132
Errata 182

Brunton, J. D., Rozelar, A. J. W., and Imre, U. Factors affecting the force between electrical contacts 602

Bryson, D. R., and Turner, C. W. (See Turner)

Bubnicki, Z. Automatic identification of nonlinear static plant by degressive feedback and digital computer 235

Bubnicki, Z. Frequency condition for the stochastic stability of a class of discrete-time control systems 200

Buckingham, M. J., and Faulkner, E. A. (See Faulkner)

Budin, J. Effect of the illumination taper on the knife-edge diffraction 50

Buildup of Gunn domains. V. Székely and K. Tarnay 492

Buis, G. R., and Vogt, W. G. Lyapunov functionals for a class of wave equations 128
Errata 236

Bulk-material device with current-controlled negative resistance. H. D. Rees 532

Bulucea, C. D. Diffusion capacitance of p–n junctions and transistors 559

Burridge, R. E., and Gupta, G. N. Comments on 2-phase drag-cup accelerometer parameter determination 320

Burton, D. P., and Noaks, D. R. High-speed iterative multiplier 262

Burton, D. P., and Noaks, D. R. Maximum-speed s.t.t. state assignments for sequential machines 464

Busbars, Clarke components for a system of, with pronounced proximity effect. H-J. Sigg and M. J. O. Strutt 188

Butcher, P. N., and Hearn, C. J. Theoretical efficiency of the l.s.a. mode for gallium arsenide at frequencies above 10GHz 459

Buttle, A., Constantinides, A. G., and Brignell, J. E. Online digital filtering 252

C

CdS, acoustically amplifying, negative resistance in, with an S type current/voltage characteristic. J. D. Maines and E. G. S. Paige 450

C.T.F.M. radar or sonar, improved near-field discrimination by the use of multiplicative signal-processing. D. G. Tucker and M. J. Withers 245

Cable systems, two examples of long-c.w.-burst measurements. G. Rosman 47

Calculated mode conversion at the sunrise boundary in the Earth-ionosphere waveguide. J. R. Wait 131

Calculation of dielectric-aerial-radiation patterns. J. R. Blakey 46

Calculation of the bandshape factor of a piezoelectric thin-film transducer. J. Trotel, E. Dieulesaint and B. Autin 156

Calculation of the harmonic components of the voltage in hybrid circuits utilising tunnel diodes and transistors. A. Y. Spasov 38

Calculation of the parameters of the microwave Gunn generator. M. E. Levinstein and M. S. Shur 233

Calculation of transient response. J. Valand 261

Calculations relating to delayed m sequencies. A. C. Davies 291

Calibration of an oscillator noise-measuring system. J. Polivka 190

Califano, F. P., and Steele, M. C. Three-terminal GaAs light emitter-modulator device 411
Errata 518

Califano, F. P. Negative-resistance amplifiers using three-terminal Gunn devices 568

Calorimeter, wire, for absolute and accurate laser-power measurements. R. Nowicki 404

Calvez, L. C., and Genin, R. (See Genin)

Canonical form for deadbeat control. W. G. Vogt and M. H. Mickle 102

Canonical (phase-variable) form by signal-flow graph. H. J. Weaver and R. J. Leake 351

Capacitor, circulator, networks. J. M. Rollett 599

Caractéristiques d'un dispositif électrométrique à varactor. (Characteristics of an electromagnetic amplifier using a varactor diode) J. Bajon 161

Carrier-frequency generation using regular pulse sequences. P. Onn 338

Carroll, J. E., and Ladbrooke, P. H. (See Ladbrooke)

Carroll, J. E. Measurement of donor density by pulsing Schottky-barrier diodes 259

Cartianu, G., and Constantin, I. Transfer functions obtained by a transform derived from the Darlington transform 327

Cartianu, G., and Constantin, I. Transfer functions with quasiChebyshev-type characteristics obtained by a Darlington-derived transformation 328

Carver, G. W., and Reiss, A. (See Reiss)

Cascade synthesis of distributed-RC networks, analytical optimisation of the. A. G. J. Holt and P. Bowron 350

Cascade synthesis of a multivariable transfer matrix. Y. Kamp and J. Neirynck 369

Cassegrain antenna system, aperture blockage by a subreflector in a. J. R. Pace 500

Cassegrain systems, shaped, optimising the blocking efficiency in. J. Dijk and E. J. Maanders 372

Cavity, air-filled, in polythene under high direct electric stresses, discharge repetition in an. S. Beg and B. Salvage 530

Cavity, gaseous, in solid dielectric, measurement of current pulses due to discharges in a. B. Salvage and O. Tapupere 529

Cellular logical arrays for extracting square roots. K. J. Dean 314

Central-pin tolerances in broadband 3-port waveguide circulators. L. E. Davies 307

Ceramic surface, vacuum breakdown at a, in a microwave cavity. F. S. Chute and G. B. Walker 395

Chan, S. P., and Rode, F. (See Rode)

Chang, F. C., Audeh, N. F., and Wu, S. T. Exact solution for the diffusion of a charged particle in a time-varying electromagnetic field 441

Channel profile on correlation measurements, effects of the. S. Osnaghi 111

Characterisation of arbitrary media in fields. J. R. James 412

Characteristics of an electromagnetic amplifier using a varactor diode. (Caracteristiques d'un dispositif électrométrique à varactor). J. Bajon 161

Chartier, G., and Koster, A. Synchronisation of two Q switched solid-state lasers 119

Chebyshev lowpass filters, generalised. R. A. Wood and N. B. Jones 158
Errata 236

Chebyshev quarterwave transformers, simplified procedure for the design of multisection. W. B. W. Alison 331
Errata 423

Chen, K. M., Lundquist, R., and Judson, H. (See Judson)

Chen, Wai-Kai. Generation of trees by algebraic methods 456

Chen, Wai-Kai. Iterative procedure for generating trees and directed trees 516
Errata 574

Chilvers, P. W. C., and Foster, K. Generalised efficency curve for step-recovery-diode frequency multipliers 487

Chisholm, S. H., and Yeh, Chuan-Sung Evidence of transit-time effects in silicon n-ν-n space-charge-limited current (s.c.l.c.) solid-state devices 498

Chopper circuits, a.c. voltage regulation by means of. A. Emanuel-Eigeles and J. Appelbaum 26

Chopper transistor, low-noise l.f. amplification using a. P. J. Baxandall 14

Christian, J. R., and Mink, J. W. (See Mink)

Chute, F. S., and Walker, G. B. Vacuum breakdown at a ceramic surface in a microwave cavity 395

Circuit-controlled modes of acoustoelectric oscillations in piezoelectric semi-conductors. C. W. Turner and D, R. Bryson 270

Circuit, high-Q factor, with reduced sensitivity. T. Deliyannis 577

Circulator-capacitor networks. J. M. Rollett 599

Circulator concept, realisation of the, using differential-input operational amplifiers. A. W. Keen, Jacqueline L. Glover and R. J. Harris 389

Circulators, active, directly coupled. J. M. Rollett and P. E. Greenaway 579

Circulators, waveguide, latched 3-port. L. E. Davis and J. R. Bacon 490

Ciscato, D., and Bombi, F. (See Bombi)

Ciscato, D., Marchesini, G., and Mariani, L. Existence of self-sustained oscillations in relay-type systems with hysteresis 505

Clarke components for a system of busbars with pronounced proximity effect. H-J. Sigg and M. J. O. Strutt 188

Clarke, P. D., and Hilsden, F. J. Gunn-diode operation at Q band frequencies 482

Class of discrete integrating operators. A. E. Durling 539

Cleary, J. C., Ross, R. A., and Freeny, C. C., (See Ross)

Coaxial cable having an electrically loaded inner conductor, possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in. H. M. Barlow 153

Coaxial cable having an electrically loaded inner conductor, possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in a. H. M. Barlow 185

Coaxial cable, new experiments on the behaviour of the hybrid TEM-dual surface wave in a. H. M. Barlow and Mira Sen 523
Coaxial cables, electrical design requirements for low-loss high-frequency. H. M. Barlow 469
Coaxial cables, high-frequency. J. Brown and G. Millington 135
Coaxial cables, propagation characteristics of the TM_{01} surface-wave mode in dielectric lined. J. E. Lewis and M. M. Kharadly 228
Coaxial cavity, ferrite filled, magnetodynamical modes in. I. Wolff 197
Coaxial IMPATT oscillators, magnetic tuning of. J. A. C. Stewart 526
Coaxial-slot surface-wave launcher. J. C. Beal and W. J. Dewar 557
Code translators used in digital transmission, method of aligning. J. M. Griffiths 495
Coherent photon-phonon interactions. J. W. Gardner 379
Collard, J. R. Gobat, A., and Kuno, H. J. (See Kuno)
Comments on method of evaluating time-weighted performance integrals. H. M. Power 3
Comments on quarter-wave transformer for a digital phase shifter. F. E. Gardiol 149
Comments on 2-phase drag-cup accelerometer parameter determination. R. E. Burridge and G. N. Gupta 320
Comments on Wiener's model of certain nonlinear systems. N. B. Jones 565
Computation of polar diagrams from paraboloidal reflector aerials with systematic deformations. P. Miller 398
Computer calculations of the efficiency of the Gunn generator. D. P. Dizhur, M. E. Levinstein and M. S. Shur 444
Computer programming, efficient tree-generation method suitable for. A. G. J. Holt and J. K. Fidler 183
Computed transient solution for the m.s.m. diode with traps. M. R. Boudry 193
Conditions for optimum noise performance in l.f. amplifiers employing junction f.e.t.s. K. F. Knott 92
Conduction, electric, in float-zone silicon after prolonged gamma irradiation. K. C. Kao and N. Pal 571
Conductivity of polar semiconductors in the presence of a high electric field, microwave. H. Kopetz and H. W. Pötzl 79
Consequences of using the bispherical electrode system for dielectric testing. J. E. Brignell 465
Constantin, I., and Cartianu, G. (See Cartianu)
Constantinides, A. G. Frequency transformations for digital filters 115
Constantinides, A. G., Brignell, J. E., and Buttle, A. (See Buttle)
Continuously variable microwave attentuation with Gunn-effect samples. H. Pollman and B. G. Bosch 317
Control, canonical form for deadbeat. W. G. Vogt and M. H. Mickle 102
Control of linear systems with time delay. D. Q. Mayne 439
Control loop, dispersive filter in E. L. R. Webb 13
Control of frequency, triangular- and trapezium-waveform oscillators for wide-band electronic. F. H. Wells and C. Sharpe 7
Control system, pulsed frequency-response calculations for a digital. R. Edwards 19
Errata 41
Control systems, application of frequency-domain stability criteria to certain nonlinear position. R. W. McGee 536
Control systems, equivalence of single-stage and N stage optimum digital. N. R. Tomlinson 110
Control systems, phase plane trajectories for linear-p.c.m.-oscillator. P. C. Parks and M. R. Miller 171
Errata 300
Control systems, stability of p.c.m.-oscillator. P. C. Parks and M. R. Miller 21
Control systems with a discontinuous error signal, z transfer functions of sampled data. R. Prajoux, Y. Sevely and P. Thierry 242
Controllability and observability, simple proof of unconditional. M. M. Milić 526
Controller using pulse-duration modulation to provide a central linear region, bang-bang. P. Atkinson, R. L. Davey and P. B. Fellget 105
Convertor with increased frequency range, simple voltage-to-frequency. S. Tesic 28
Convertors, magnitude/frequency, new class of. F. Bombi and D. Ciscato 453
Convolution approximation, selective properties of digital filters obtained by. R. Vích 1
Cooled broadband parametric amplifier at 4 GHz. C. Fi eld and M. C. McNeill 271
Corbey, C. D., Davies, R., and Newton, B. H. Varactor harmonic-generator chain as a pump source for a parametric amplifier 397
Cornbleet, S. Beam shaping for optimum illumination patterns 502
Corona pulses, techniques for determining the characteristics of. S. M. Foggo and L. C. Whitcombe 284
Correlation between the responses of two systems, performance index based on the. B. Sarkar 6
Errata 142
Correlation, drift, in periodic crosscorrelation schemes. R. F. Brown 478
Correlation measurements, effects of the channel profile on. S. Osnaghi 111
Correlation-multiplex data-transmission system. R. Barrett and J. Karran 538
Errata 604
Coupled antennas in a dissipative medium. H. P. Nguyen 486
Couplers, small-hole. C. G. Someda 580
Coupling between mutually orthogonal slot antennas covered by an overdense plasma sheath. P. F. Sforza 243
Courant de recombinaision associé aux états de surface dans les jonctions p-n. (Excess current in p-n junctions associated with surface states). D. Esteve 305
Cram, L. A., Prewer, B. E., and Becklake, E. J. S. (See Becklake)
Craven, G. Relationship between direct-coupled waveguide filters and evanescent-mode filters 44
Croft, D. G., Smith, R. B., and Bramer B. (See Smith)
Crosbie, R. E., and Halder, A. K. Improved mathematical representation of arc static characteristic 330
Crosscorrelation, p. r. b. n., practical study of drift correction in. R. F. Brown 588
Crosscorrelation schemes, drift correlation in periodic. R. F. Brown 478
Csillag, P., Hoffman, J. C., and Lacaze, B. (See Hoffman)
Current distribution of monopoles, measurement of the, in a large volume of hot plasma. H. Judson, K. M. Chen and R. Lundquist 289
Current-controlled negative resistance, bulk-material device with. H. D. Rees 532
Current source stretches timer pulse widths, 'state-dependent'. K. S. Mehta and M. Venugopal 531
Current waves on an infinite cylindrical antenna in a warm plasma. D. T. Nguyen 94
Cylindrical dielectric-rod antennas, aperture coupling in. J. R. James 39

D

D-decomposition techniques, efficient application of, to determine stability boundaries for multiparameter systems, with particular reference to induction machines. P. J. Lawrenson, S. R. Bowes and J. M. Stephenson 435
Damping of surface (sound) waves by the air. G. Bradfield 95
Darlington-derived transformation, transfer functions with quasiChebyshev-type characteristics obtained by a. G. Cartianu and I. Constantin 328
Darlington transform, transfer functions obtained by a transform derived from the. G. Cartianu and I. Constantin 327
Das, J., and Bose, S. C. Some results for an r.f.- and p.l.- modulated incoherent carrier. 48
Errata 342
Dascalu, D. Transit-time effects in bulk negative-mobility amplifiers 581
Data compression, improved methods of asynchronous. R. McCaughern, A. M. Rosie and F. C. Monds 493
Data compression, two methods of asynchronous. R. McCaughern, A. M. Rosie and F. C. Monds 363
Data-dependent iterative array, binary division using a. K. J. Dean 283
Data-transmission system, correlation-multiplex. R. Barrett and J. Karran 538
Errata 604
Davey, R. L., Fellget, P. B., and Atkinson, P. (See Atkinson)
Davies, A. C. Calculations relating to delayed m sequences 291
Davies, A. C. Probability distributions of noiselike waveforms generated by a digital technique 421
Davies, D. E. N., and Rudge, A. W. Some results of an electronic compensation for surface profile errors in parabolic reflectors 433
Davies, D. E. N. Improvements in near-field discrimination for radar or sonar systems by the use of separate transmitting and receiving arrays. 383
Davies, D. E. N. Use of bistatic radar techniques to improve resolution in the vertical plane 170
Davies, L. E. Central-pin tolerances in broad-band 3-port waveguide circulators 307
Davies, M. S. Stability of a class of nonlinear systems. 322
Davies, R., Newton, B. H., and Corbey, C. D. (See Corbey)
Davis, ., and Bacon, J. R. Latched 3-port wave, le circulators 490
Deadbeat control, canonical form for. W. G. Vogt and M. H. Mickle 102
Dean, K. J. Binary division using a data-dependent iterative array 283
Dean, K. J. Cellular logical arrays for extracting square roots 314
Dean, K. J. Logical circuits for use in iterative arrays 81
Errata 142
Dean, K. J. Versatile multiplier arrays 333
Dècina, M., and Giacomelli, L. (See Giacomelli)
Decision surface, hyperelliptical, for pattern recognition, error-correcting algorithm for adapting. B. G. Batchelor and B. R. Wilkins 204
Errata 300
Decoupling of ports of a waveguide junction, general theorem on symmetry-imposed. R. J. Vernon 586
Deeley, E. M., Image restoration by aperture-correction techniques 534
Delay devices, time variable, general analysis of. R. A. Johnson 263
Delay-equaliser design by digital computer, optimisation technique in. B. D. Rakovich 123
Delay networks, variable electronic allpass. R. K. P. Galpin 137
Delayed versions of m sequences. J. L. Douce 254
Deliyannis, T. High-Q factor circuit with reduced sensitivity 577
Denker, S. P. Rational design of Gunn- and l.s.a.-diode electrodes 294
Design of feedback networks by the use of 2-port methods. A. C. Ponder 89
Design of linear circuits, sensitivity analysis in computer-aided. T. B. M. Neill 316
Errata 370
Désormière, B. Absorption spectra in axially magnetised y.i.g. rods 219
Determination of Laplace-Poisson domain interface. J. A. Magowan and W. D. Ryan 93
Determination of pulse distortion in transmission-line systems having reactive terminations using the graphical method. R. Murray-Shelley 589
Determination of the ambipolar diffusion coefficient of mercury-vapour plasma in the late-afterglow region. A. G. Heaton and D. K. Pal 455
Determination of the constants of the capacitance/voltage law of a varactor diode. R. B. Smith, B. Bramer and D. G. Croft 274
Determination of the linear output signal of a process containing single-valued nonlinearities. A. B. Gardiner 224
Dewar, W. J., and Beal, J. C. (See Beal)
Diaphragms in evanescent waveguides. C. K. Mok 43
Dielectric-aerial-radiation patterns, calculation of. J. R. Blakey 46
Dielectric-rod transmission line, portrayal of the field at the junction between a Yagi structure and a. E.-G. Neumann 295
Dielectric sheets, simplified model for the domain dynamics in Gunn-effect semiconductors covered with. R. Engelmann 546
Dielectric, solid, measurement of current pulses due to discharges in a gaseous cavity in. B. Salvage and O. Tapupere 529
Dielectric testing, consequences of using the bispherical electrode system for. J. E. Brignell 465
Dieulesaint, E., Autin, B., and Trotel, J. (See Trotel)
Differential equation for a linear combination of variables in a linear multivariable system. H. M. Power 524
Differential equations, nonlinear, accuracy of the Volterra-series method for. M. Kiełkiewicz 584
Differential integrators, active RC filters with. D. Wolff 428
Diffraction effects, laser-beam modulation using grating. J. F. St. Ledger and E. A. Ash 99
Diffraction, wedge, effect of source pattern on. L. Lewin 82
Diffusion capacitance of p-n junctions and transistors. C. D. Bulucea 559
Diffusion constant on small-signal behaviour of bulk negative-mobility devices, effect of the field-dependence of. Y. Nishimura 249
Digital computer, optimisation technique in delay-equaliser design by. B. D. Rakovich 123
Digital computer, symbolic solution of networks by. G. Le Moli and M. G. Sami 481
Digital computers, evaluation of topological formulas using. F. Rode and S. P. Chan 256
Errata 342
Digital control system, pulsed frequency-response calculations for. R. Edwards 19
Errata 41
Digital control systems, equivalence of single-stage and N stage optimum. N. R. Tomlinson 110
Digital-filter precorrection for zero-order hold distortion. D. P. Henkel, D. J. Nowak and P. E. Schmid 514
Digital filtering, online. A. Buttle, A. G. Constantinides and J. E. Brignell 252
Digital filters, frequency transformation for. A. G. Constantinides 115
Digital filters obtained by convolution approximation, selective properties of. R. Vích 1
Digital phase shifter, comments on quarter-wave transformer for. F. E. Gardiol 149

Digital process control computer, simulation of dynamic physical systems using a. J. G. Sellers and A. Thompson 371
Digital statistical analyser for low frequencies. R. Kitai and D. Braithwaite 195
Digital transmission, method of aligning code translators used in. J. M. Griffiths 495
Dijk, J., and Maanders, E. J. Optimising the blocking efficiency in shaped Cassegrain systems 372
Diode, evaluation of i.f. impedance of the, from d.c. analysis. Y. Anand and M. Goldman 179
Diode, silicon "punch through". E. B. Kuchis and G. T. Wright 35
Diode, varactor, determination of the constants of the capacitance/voltage law of a. R. B. Smith, B. Bramer and D. G. Croft 274
Di Porto, P. G., and Martinelli, G. (See Martinelli)
Direct-coupled resonator filters with improved selectivity. B. Easter and K. J. Powell 415
Directed trees, and trees, iterative procedure for generating. Wai-Kai Chen 516
Errata 574
Directly coupled active circulators. J. M. Rollett and P. E. Greenaway 579
Discharge repetition in an air-filled cavity in polythene under high direct electric stresses. S. Beg and B. Salvage 530
Discharges in gaseous cavity in solid dielectric, measurement of current pulses due to. B. Salvage and O. Tapupere 529
Discharges in mercury at low pressures, hollow cathode. R. W. Young 66
Discrete integrating operators, class of. A. E. Durling 539
Discrete linear scalar systems, identification of, by minimisation of a parametric norm. J. Richalet and B. Gimonet 547
Discrete multivariate systems, identification of, by minimisation of a parametric norm. F. Lecamus and J. Richalet 549
Discrete-time control systems, frequency condition for the stochastic stability of a class. Z. Bubnicki 200
Discriminator, dual-mode optical-frequency. J. W. Mink and J. R. Christian 246
Dispersive filter in a control loop. E. L. R. Webb 13
Distributed RC elements with rational short-circuit matrices. S. Řízek 458
Distributed-RC networks, analytical optimisation of the cascade synthesis of. A. G. J. Holt and P. Bowron 350
Dizhur, D. P., Levinstein, M. E., and Shur, M. S. Computer calculations of the efficiency of the Gunn generator 444
Domain dynamics in Gunn-effect semiconductors covered with dielectric sheets, simplified model for the. R. Engelmann 546
Donor density, measurement of, by pulsing Schottky-barrier diodes. J. E. Carroll 259
Dore, M. Laser-beam modulation using grating diffraction effects 318
Double injection, single injection, and negative resistance in gold-doped high-resistivity silicon. G. T. Wright and A. F. Ibrahim 597
Douce, J. L. Delayed versions of m sequences 254
Doughty, D. C. Improved travelling-wave ZnS light modulator 551
Doughty, D. C. X band travelling-wave light-intensity modulator using ZnS crystals. 134
Doust, C. E., and Walford, G. (See Walford)
Drag-cup accelerometer parameter determination, comments on 2-phase. R. E. Burridge and G. N. Gupta 320
Drangeid, K. E., Jaggi, R., Middelhoek, S., Mohr, Th., Moser, A., Sasso, G., Sommerhalder, R., and Wolf, P. Microwave silicon Schottky-barrier field-effect transistor 362
Drift correction in p.r.b.n. crosscorrelation, practical study of. R. F. Brown 588
Drift correlation in periodic crosscorrelation schemes. R. F. Brown 478
Dual-mode optical-frequency discriminator. J. W. Mink and J. R. Christian 246
Durling, A. E. Class of discrete integrating operators 539
Dutta Roy, S. C., and Anderson, G. G. (See Anderson)
Dvorák, V. Time-discrete networks 222
Dynamic physical systems, simulation of, using a digital process-control computer. J. G. Sellers and A. Thompson 371
Dynamical system theory, two applications of the matrix transformation $A = (B + I)(B - I)^{-1}$ in. H. M. Power 479
Dynamical systems, adjustment of the responses of reduced. J. H. Anderson 75

E

Earth-ionosphere waveguide, calculated mode conversion at the sunrise boundary in the. J. R. Wait 131
Easter, B., and Powell, K. J. Direct-coupled resonator filters with improved selectivity 415
Eddolls, D. V., and Knibb, T. F. Q band microwave-biased photoconductive detector 337
Eddolls, D. V., Knibb, T. F., and Bass, J. C. (See Bass)
Edge injection and pinch-in effect of transistors with cylindrical geometry (Randverdängung und Einschnürung bei Transistoren mit zylindrischer Geometrie). H.-M. Rein 553
Edwards, R., and Knowles, J. B. (See Knowles)
Edwards, R. Pulsed frequency-response calculations for a digital control system 19
Errata 41
Effect of Johnson noise on l.s.a. oscillators G. S. Hobson 230
Effect of operating conditions on reverse gate current of junction f.e.t.s. E. P. Fowler 216
Effect of source pattern on wedge diffraction. L. Lewin 82
Effect of the field-dependence of the diffusion constant on small-signal behaviour of bulk negative-mobility devices. Y. Nishimura 249
Effect of the illumination taper on the knife-edge diffraction. J. Budin 50
Effects of a vanishing variable on the signal-flow graph. H. K. Kim 501
Effects of large parasitic loops on Alford-loop counterpoise radiation patterns. D. L. Sen Gupta and J. E. Ferris 223
Effects of the channel profile on correlation measurements. S. Osnaghi 111
Efficiency of the transistor transit-time oscillator. G. T. Wright 217
Efficient application of D-decomposition techniques to determine stability boundaries for multiparameter systems, with particular reference to induction machines. P. J. Lawrenson, S. R. Bowes and J. M. Stephenson 435
Efficient broadband excitation of the n = 0 surface magnetostatic waves in a y.i.g. slab. P. Young 566
Efficient frequency multiplication by odd factors without idlers. J. Fikart 544
Efficient tree-generation method suitable for computer programming. A. G. J. Holt and J. K. Fidler 183
Eigenfuctions and the solution of sensitivity equations. D. C. Reddy 262
Eigenvalue and control-law trajectories for a turboalternator model under fault conditions. H. Nicholson 9
Electric conduction in float-zone silicon after prolonged gamma irradiation. K. C. Kao and N. Pal 571
Electric stresses, discharge repetition in an air-filled cavity in polythene under high direct. S. Beg and B. Salvage 530
Electrical contacts, factors affecting the force between. J. D. Brunton, A. J. W. Rozelar and U. Imre 602
Electrical design requirements for low-loss high-frequency coaxial cables. H. M. Barlow 469
Electromagnetic amplifier, characteristics of an, using a varactor diode. J. Bajon 161
Electromagnetic field, time-varying, exact solution for the diffusion of a charged particle in a. F. C. Chang, N. F. Audeh and S. T. Wu 441
Electromagnetic fields by photochemical reaction, mapping of. K. Iizuka 68
Electromagnetic transient response of a spherical conducting shell. J. R. Wait 576
Electromagnetic wave propagation in cylindrically stratified isotropic media. B. S. Westcott 323
Errata 574
Electromagnetic wave propagation in spherically stratified isotropic media. B. S. Westcott 572
Electronic control of alternator excitation by gyrators and nonreciprocal networks. D. Midgley 101
Electronic/fluidic interface switch. R. J. A. Paul and M. H. Lorenz 409
Eliminating the effect of site reflections on radiation patterns of microwave aerials. T. K. Fitzsimons 348
Elinination of quadratic drift errors in system identification by pseudorandom binary signals. H. A. Barker 255
Ellipsometer, fast-response automatic. A. F. Pllard and H. House 166
Emanuel-Eigeles, A., and Appelbaum, J. A.C. Voltage regulation by means of chopper circuits 26
Emitter-base breakdown and saturation of silicon planar transistors, application of the reverse. S. G. Johnson 109
Engelmann, R. Simplified model for the domain dynamics in Gunn-effect semiconductors covered with dielectric sheets 546
Englemann, R. W. H., and Heinle, W. Proposed Gunn-effect switch 190
Enhancement of s.e.c. target gain in television-camera tubes. D. McMullan and G. O. Towler 542
Environment, influence of, on the convergence of a learning game-playing machine. D. J. Quarmby 244
Equivalence of single-stage and N stage optimum digital control systems. N. R. Tomlinson 110
Equivalent circuit for the conductance of an m.o.s.f.e.t. P. D. Lunsmann 100
Equivalent gain of an instantaneous quantiser with two independent random inputs. L. Giacomelli and M. Dècina 269
Error-correcting algorithm for adapting a hyperelliptical decision surface for pattern recognition. B. G. Batchelor and B. R. Wilkins 204
Errata 300
Esteve, D. Courant de recombinaison associé aux états de surface dans les jonctions p-n. (Excess current in p-n junctions associated with surface states) 305
Étude numerique de la multiplication par avalanche dans les jonctions p-n abruptes au silicium. (Numerical study of avalanche multiplication in silicon p-n abrupt junctions) 447
Evaluation of transient response. N. Ahmed and K. R. Rao 533
Evanescent-mode resonator of pure TE mode. J. J. Hupert and J. Vigil 569
Evidence of transit-time effects in silicon n-ν-n space-charge-limited current (s.c.l.c.) solid-state devices. S. H. Chisholm and Chuan-Sung Yeh 498
Evaluation of i.f. impedance of the diode from d.c. analysis. Y. Anand and M. Goldman 179
Evaluation of topological formulas using digital computers. F. Rode and S. P. Chan 256
Errata 342
Evanescent-mode filters, relationship between direct-coupled waveguide filters. G. Craven 44
Evanescent waveguides, diaphragms in. C. K. Mok 43
Exact solution for the diffusion of a charged particle in a time-varying electromagnetic field. F. C. Chang, N. F. Audeh and S. T. Wu 441
Excess current in p-n junctions associated with surface states. (Courant de recombinaison associé aux états de surface dans les jonctions p-n). D. Esteve 305
Excitation control, 2-axis, synchronising and damping torques in a synchronous machine. D. P. Sen Gupta and B. W. Hogg 215
Existence of self-sustained oscillations in relay-type systems with hysteresis. D. Ciscato, G. Marchesini and L. Mariani 505
Experimental analysis of high-efficiency avalanche-resonance pumped oscillators. C. P. Snapp, L. A. Stark and B. Hoefflinger 595
Experimental signal/noise-ratio comparison of the second-order phase-locked loop and the second-order frequency-locked loop. M. G. Unkauf and R. J. Schulman 585
Extended boundedness concept for the problem of Lur'e. S. Weissenberger 489

F

F.E.T. multiplier, temperature-compensated. M. M. Abu-Zeid, H. Groendijk and A. Willemse 324
F.E.T.S, conditions for optimum noise performance in l.f. amplifiers employing junction. K. F. Knott 92
F.E.T.S. junction, effect of operating conditions on reverse gate current. E. P. Fowler 216
F.M.- and a.m.-noise characteristics of solid-state microwave oscillators. V. P. Kodali 147
Factors affecting the force between electrical contacts. J. D. Brunton, A. J. W. Rozelar and U. Imre 602
Fast-response automatic ellipsometer. A. F. Pollard and H. House 166
Faraday rotation, towards reducing errors in radar measurement of. R. H. T. Bates and A. R. Jamieson 155
Faulkner, E. A., and Buckingham, M. J. Modified theory of the current/voltage relation in silicon p-n junctions 359
Faulkner, E. A., and Grimbleby, J. B. Reduction of flicker noise in transistor amplifiers 80
Faulkner, E. A., and Meade, M. L. Flicker noise in Gunn diodes 226
Fawcett, W., and Bott, I. B. (See Bott)
Feedback networks by the use of 2-port methods, design of. A. C. Ponder 89
Fellget, P. B., Atkinson, P., and Davey, R. L. (See Atkinson)
Felsen, L. B., and Maurer, S. J. Ray interpretation of modes in curved nonuniform waveguides. 70
Fernando, C. E., and Lloyd, O. (See Lloyd)
Ferrimagnetic resonator, yttrium-iron garnet (y.i.g.), wide-range electronic tuning of a Gunn diode by an. D. A. James 451
Ferris, J. E., and Sen Gupta, D. L. (See SenGupta)
Ferrite-filled coaxial cavity, magnetodynamical modes in. I. Wolff 197
Ferrites, hexagonal, with planar anisotropy, non-reciprocal circular polariser using. J. Helszajn and J. McStay 184
Fidler, J. K., and Holt, A. G. J. (See Holt)
Field- and photon-enhanced field emission from thin-film field-emission devices. S. Akram-Husain and D. Walsh 339
Field, C., and McNeill, M. C. Cooled broadband parametric amplifier at 4 GHz 271

Field distribution of the forward-wave plasma-guide mode on a magnetised plasma column. K. C. Gupta and A. Singh 378
Field-effect transistor, Schottky barrier, microwave silicon. K. E. Drangeid, R. Jaggi, S. Middelhoek, Th. Moser, G. Sasso, R. Sommerhalder and P. Wolf 362
Field emmission, field- and photon-enhanced, from thin-film field-emission devices. S. Akram-Husain and D. Walsh 339
Fikart, J. Efficient frequency multiplication by odd factors without idlers 544
Filtering, narrow-bandpass, with modulation. R. K. P. Galpin 165
Filtering, online digital. A. Buttle, A. G. Constantinides and J. E. Brignell 252
Filters, generalised Chebyshev lowpass. R. A. Wood and N. B. Jones 158
Errata 236
Filters, pulse, with parabolic distribution of poles, improving the transient-response characteristics of. G. G. Anderson and S. C. Dutta Roy 173
Filters, resonator, direct coupled, with improved selectivity. B. Easter and K. J. Powell 415
Finite-element method for waveguide problems. S. Ahmed 387
Fitzgerrell, R. G. Surface-wave propagation-constant measurements 286
Fitzsimons, T. K. Eliminating the effect of site reflections on radiation patterns of microwave aerials 348
Flicker noise in Gunn diodes. E. A. Faulkner and M. L. Meade 226
Flicker noise in transistor amplifiers, reduction of. E. A. Faulkner and J. B. Grimbleby 80
Float-zone silicon, electric conduction in, after prolonged gamma irradiation. K. C. Kao and N. Pal 571
Fluctuations, mean detector for slow. H. Sutcliffe 97
Foggo, S. M., and Whitcombe, L. C. Techniques for determining the characteristics of corona pulses 284
Forced oscillations in an oscillating circuit utilising nonlinear capacitance. A. Y. Spasov 365
Foster, H., Hambleton, K. G., and Beesley, M. J. (See Beesley)
Foster, K., and Chilvers, P. W. C. (See Chilvers)
Foster, K., and Wing, P. A. (See Wing)
Foster, P. M. Response of an RC network 483
Foulk, P. W., and Green, D. H. (See Green)
Fourier, Laplace and Hilbert transforms. S. C. Kak 396
Errata 574
Fourier-series expansion, solution of antenna problems by. H. P. Nguyen 354
Fowler, E. P. Effect of operating conditions on reverse gate current of junction f.e.t.s. 216
Fox, A. J., and Mansell, J. R. Light modulation at video frequencies 12
Fravalo, C., and Genin, R. (See Genin)
Freedman, N. J., and Brundle, L. K. (See Brundle)
Freedman, N. J., and Brundle, L. K. Nonlinear behaviour of magnetostatic surface waves 427
Freeny, C. C., Cleary, J. C., and Ross, R. A. (See Ross)
Frequency condition for the stochastic stability of a class of discrete-time control systems. Z. Bubnicki 200
Frequency-domain stability criteria, application of, to certain nonlinear position control systems. R. W. McGee 536
Frequency-locked loop, second-order, experimental signal/noise-ratio comparison of the second-order phase-locked loop and the. M. G. Unkauf and R. J. Schulman 585
Frequency-modulated signals using transferred-electron oscillators, simple repeaters for. S. V. Judd 33
Frequency-modulated single-mode laser. J. Kupka 31
Frequency multiplication, efficient, by odd factors without idlers. J. Fikart 544
Frequency multipliers, step-recovery-diode, generalised efficiency curve for. P. W. C. Chilvers and K. Foster 487
Frequency response of a distributed piezoelectric source of sound. R. F. Mitchell and M. Redwood 107
Frequency stability of a monotron oscillator with superconducting cavity. F. Biquard, P. Grivet and A. Septier 143
Frequency transformations for digital filters. A. G. Constantinides 115
Frost, W. T., and Hatley, E. T. Magnetic duplication of video records 334
Fujii, N. Active RC networks using a parallel T 239
Function generation, multivariable, using a hybrid computer. G. C. Barney 419
Function with variable poles, simulation of. J. D. Martin 594
Fundamental microwave oscillations in epitaxial GaAs by control of space-charge growth. B. C. Taylor and S. E. Gibbs 471
Fundamental power/frequency limitations of microwave semiconductor devices. V. P. Kodali 311

G

GaAs avalanche diodes, microwave amplification with. H. J. Kuno, J. R. Collard and A. Gobat 540
GaAs, epitaxial, fundamental microwave oscillations in by control of space-charge growth. B. C. Taylor and S. E. Gibbs 471
GaAs Schottky diodes with linear log I/V behaviour over eight decades of current. B. L. Smith 332
Errata 394
GaAs transferred-electron oscillators, high-bias-voltage operation of. S. Y. Narayan and A. R. Gobat 504
Gallium arsenide theoretical efficiency of the l.s.a. mode for at frequencies above 10GHz. P. N. Butcher and C. J. Hearn 459
Game playing machine, influence of environment on the convergence of a learning. D. J. Quarmby 244
Gamma irradiation, electric conduction in float-zone silicon after prolonged. K. C. Kao and N. Pal 571
Gardiner, A. B. Determination of the linear output signal of a process containing single-valued nonlinearities 224
Gardiol, F. E. Comments on quarter-wave transformer for a digital phase shifter 149
Gardner, J. W. Coherent photon-phonon interactions 379
Galejs, J. Surface fields and near fields of a linear antenna 519
Galpin, R. K. P. Narrow-bandpass filtering with modulation 165
Galpin, R. K. P. Variable electronic allpass delay networks 137
Galpin, R. K. P. Versatile and accurate method of group-delay measurement 23
Gatti, E., Phadnis, M., and Sona, A. Logical operations by interferometric techniques 556
General analysis of time-variable delay devices. R. A. Johnson 263
General form of the reciprocity relationship for bianisotropic media. G. P. Bava 299
General theorem on symmetry-imposed decoupling of ports of a waveguide junction. R. J. Vernon 586
Generalisation des propriétés de symétrie des circuits gyrateurs et n.i.c. (Generalisation of the symmetry properties of gyrators and n.i.c. circuits) R. Genin and C. Fravalo 116
Generalisation of the symmetry properties of gyrators and n.i.c. circuits. (Generalisation des propriétés de symétrie des circuits gyrateurs et n.i.c.). R. Genin and C. Fravalo 116
Generalised Chebyshev lowpass filters. R. A. Wood and N. B. Jones 158
Errata 236
Generalised distributions of nonuniformity of hypergeometric transmission line. A. G. J. Holt and K. U. Ahmed 167
Generalised efficiency curve for step-recovery-diode frequency multipliers. P. W. C. Chilvers and K. Foster 487
Generalised functions, products of. R. F. Hoskins 4
Errata 61
Generalised patterns of nonuniformity for solvable algebraic and transcendental transmission lines. A. G. J. Holt and K. U. Ahmed 287
Errata 394
Generalised resultant. H. H. Rosenbrock 250
Generation of trees by algebraic methods. Wai-Kai Chen 456
Genin, R., and Calvez, L. C. Inversion numérique de la transformation de Laplace à l'aide des polynômes de Laguerre. (Numerical inversion of the Laplace transform using Laguerre polynomials) 461
Genin, R., and Fravalo, C. Generalisation des propriétés de symétrie des circuits gyrateurs et n.i.c. (Generalisation of the symmetry properties of gyrators and n.i.c. circuits) 116
Germanium semiconductor detector, anomalous effects in a lithium-drifted. G. Walford and C. E. Doust 13
Giacomelli, L., and Dècina, M. Equivalent gain of an instantaneous quantiser with two independent random inputs 269
Gibbons, G., and Grace, M. I. (See Grace)
Gibbs, S. E., and Taylor, B. C. (See Taylor)
Giblin, R. A. High-efficiency operation of avalanche-diode oscillators 52
Gimonet, B., and Richalet, J. (See Richalet)
Giraud, A., Mira, C., and Babary, J. P. (See Babary)
Glover, Jacqueline L., Harris, R. J., and Keen, A. W. (See Keen)
Glow-discharge gun, ring-and-line focus electron beams from a. G. G. Isaacs 405
Gobat, A., Kuno, H. J., and Collard, J. R. (See Kuno)
Gobat, A. R., and Narayan, S. Y. (See Narayan)
Godfrey, K. R., and Briggs, P. A. N. (See Briggs)
Gold-doped high-resistivity silicon, single injection, double injection and negative resistance in. G. T. Wright and A. F. Ibrahim 597
Goldman, M., and Anand, Y. (See Anand)
Goodyear, C. C., and Razzak, S. A. A.. (See Razzak) 54
Grace, M. I., and Gibbons, G. High-efficiency microwave oscillations from Si avalanche diodes 564
Graphical method, determination of pulse-distortion in transmission-line systems having reactive terminations using the. R. Murray-Shelley 589
Grating diffraction effects, laser-beam modulation using. M. Dore 318
Gray, J. P., and Holt, A. G. J. (See Holt)
Green D. H., and Foulk, P. W. Ternary maps for binary functions 343
Greenaway, P. E., and Rollett, J. M. (See Rollett)
Griffiths, J. M. Method of aligning code translators used in digital transmission 495
Grimbleby, J. B. and Faulkner, E. A. (See Faulkner)
Grivet, P., Septier, A., and Biquard, F. (See Biquard)
Groendijk, H., Willemse, A., and Abu-Zeid, M. M. (See Abu-Zeid)
Ground wave over a stratified earth, optimisation of the. J. R. Wait 575
Group-delay measurement, versatile and accurate method of. R. K. P. Galpin 23
Group velocity of dielectric waveguide modes. P. J. R. Laybourn 507
Growth of ionisation currents in the methyl halides. S. A. A. Razzak and C. C. Goodyear 54
Guekos, G., and Strutt, M. J. O. Laser-emission and voltage noise of GaAs c.w. laser diodes 408
Guetin, P. Gunn effect with two samples in parallel 63
Gunn- and l.s.a.-diode electrodes, rational design of. S. P. Denker 294
Gunn devices, negative-resistance amplifiers using three-terminal. F. P. Califano 568
Gunn-diode operation at Q band frequencies. P. D. Clarke and F. J. Hilsden 482
Gunn diode, wide-range electronic tuning of a, by an yttrium-iron garnet (y.i.g.) ferrimagnetic resonator. D. A. James 451
Gunn diodes, flicker noise in. E. A. Faulkner and M. L. Meade 226
Gunn diodes, pulse gain and analogue-to-pulse conversion by. S. H. Izadpanah and H. L. Hartnagel 315
Gunn domain, intervalley scattering model of the. V. Székely and K. Tarnay 592
Gunn domains, buildup of. V. Székely and K. Tarnay 492
Gunn-effect oscillator, integral, microwave-biased photodetector system with an. J. C. Bass, D. V. Eddolls and T. F. Knibb 429
Gunn-effect semiconductors covered with dielectric sheets, simplified model for the domain dynamics in. R. Engelmann 546
Gunn-effect parametric amplifier, possible. C. S. Aitchison 15
Gunn-effect samples, continuously variable microwave attenuation with. H. Pollman and B. G. Bosch 317
Gunn-effect switch, proposed. R. W. H. Engelmann W. Heinle 190
Gunn effect with two samples in parallel. P. Guetin 63
Gunn generator, calculation of the parameters of the microwave. M. E. Levinstein and M. S. Shur 233
Gunn generator, computer calculations of the efficiency of the. D. P. Dizhur, M. E. Levinstein and M. S. Shur 444
Gunn oscillator, microwave, tuned electronically over 1 GHz. B. K. Lee and M. S. Hodgart 240
Gunn oscillator, variable-length. F. A. Myers, J. McStay and B. C. Taylor 386
Gunn oscillators, initial growth of domains in. I. Lundström 120
Gunn oscillators, parallel-fed c.w., cascaded in X band waveguide for higher microwave power. S. Boronski 185
Gunn oscillators, simple theory for improving the efficiency of. P. H. Ladbrooke and J. E. Carroll 83
Gunn oscillators, X band, theoretical study of the effect of temperature on. I. B. Bott and W. Fawcett 207
Gupta, G. N., and Burridge, R. E. (See Burridge)
Gupta, K. C., and Singh, A. Field distribution of the forward-wave plasma-guide mode on a magnetised plasma column 378
Gyrator circuit, wideband electronic. H. Th. Van Looij and K. M. Adams 431
Gyrator circuits obtained by using nullors, new. A. Antoniou 87
Gyrator circuits, phase-compensation in electronic. H. Th. Van Looij and K. M. Adams 430
Gyrator circuits, stability properties of some. A. Antoniou 510
Errata 574
Gyrator circuits, 3-terminal, using operational amplifiers. A. Antoniou 591

Gyrators and n.i.c. circuits, generalisation of the symmetry properties of. R. Genin and C. Fravalo 116
Gyrators and nonreciprocal networks, electronic control of alternator excitation by. D. Midgley 101
Gyrators, minimal number of nullors for realising active. G. Martinelli and P. G. Di Porto 273

H

Halder, A. K., and Crosbie, R. E. (See Crosbie)
Halladay, H. E., and Van der Ziel, A. Test of the thermal-noise hypothesis in m.o.s.f.e.t.s. 366
Hambleton, K. G., Beesley, M. J., and Foster, H. (See Beesley)
Hanrahan H. E. New results for time averages as statistical averages 34
Hanrahan, H. E. New results for time averages as statistical averages 114
Harris, R. J., Keen, A. W., and Glover, Jacqueline L. (See Keen)
Hartnagel, H. L., and Izadpanah, S. H. (See Izadpanah)
Hatley, E. T., and Frost, W. T. (See Frost)
Hart, B. L. Novel cable-drive interface unit 57
Hearn, C. J., and Butcher, P. N. (See Butcher)
Heaton, A. G., and Pal, D. K. Determination of the ambipolar diffusion coefficient of mercury-vapour plasma in the late-after-glow region 455
Heinle, W., and Engelmann, R. W. H. (See Engelmann)
Helicon diagnostic of acoustoelectric domains in InSb. F. Seifert 356
Helszajn, J., and McStay, J. Nonreciprocal circular polariser using hexagonal ferrites with planar anisotropy 184
Henkel, D. P., Nowak, D. J., and Schmid, P. E. Digital-filter precorrection for zero-order hold distortion 514
High-efficiency microwave oscillations from Si avalanche diodes. M. I. Grace and G. Gibbons 564
High-bias-voltage operation of GaAs transferred-electron oscillators. S. Y. Narayan and A. R. Gobat 504
High-efficiency operation of avalanche-diode oscillators. R. A. Giblin 52
High-frequency coaxial cables. J. Brown and G. Millington 135
High-power radio-frequency transistor amplifier. P. Rohan, M. Viola, E. Templar and J. Wilcox 442
High-Q factor circuit with reduced sensitivity. T. Deliyannis 577
High-Qfactor shunt-switched N-path filters. R. C. V. Macario 382
High Q factor resonators in microstrip. P. Troughton 520
High-resistivity silicon, gold-doped, single injection, double injection and negative resistance in. G. T. Wright and A. F. Ibrahim 597
High-speed iterative multiplier. D. P. Burton and D. R. Noaks 262
High-speed-logic integrated circuits, simple graphical method to determine line reflections between. M. Abdel-Latif and M. J. O. Strutt 496
Hilbert, Fourier and Laplace transforms. S. C. Kak 396
Errata 574
Hilsden, F. J., and Clarke, P. D. (See Clarke)
Hobson, G. S. Effect of Johnson noise on l.s.a. oscillators 230
Hodgart, M. S., and Lee, B. K. (See Lee)
Hoefflinger, B., Snapp, C. P., and Stark, L. A. (See Snapp)
Hoff, F. Reliability parameters of equipment with a general repair-time distribution 391
Errata 470
Hoffman, J. C., Lacaze, B., and Csillag, P. Multiplieur parallèle à circuits logique iteratifs. (Iterative logical network for parallel multiplication) 178
Hogg, B. W., and Sen Gupta, D. P. (See Sen Gupta)
Hollow-cathode discharges in mercury at low pressures. R. W. Young 66
Hollway, D. L., and Somlo, P. I. Stable broadband variable noise source for microwave radio-metry 24
Holograms, acoustic. L. V. Skattebol 583
Holographic projection of microcircuit patterns. M. J. Beesley, H. Foster and K. G. Hambleton 49
Holt, A. G. J., and Ahmed, K. U. Generalised distributions of nonuniformity by hyper-geometric transmission line. 167
Holt, A. G. J., and Ahmed, K. U. Generalised patterns of nonuniformity for solvable algebraic and transcendental transmission lines 287
Errata 394
Holt, A. G. J., and Bowron, P. Analytical optimisation of the cascade synthesis of distributed-RC networks for sharp cutoff 350
Holt, A. G. J., and Bowron, P. Raised trigono-metric and hyperbolic power lines 140
Errata 236
Holt, A. G. J., and Fidler, J. K. Efficient tree-generation method suitable for computer programming 183
Holt, A. G. J., and Fidler, J. K. Optimally sensitive networks 176
Holt, A. G. J., and Fidler, J. K. Summed sensitivity of network functions. 85
Holt, A. G. J., and Fidler, J. K. Summed sensitivity of active networks 385
Holt, A. G. J., and Gray, J. P. Tunable active allpass sections 37
Holt, A. G. J., and Lee, M. R. Summed sensitivity of active RC networks 298
Holt, A. G. J., and Nightingale, C. Subharmonics produced in purely resistive networks with single sinusoidal inputs 152
Holt, A. G. J., and Nightingale, C. Time-axis expanding network 319
Hoskins, R. F. Products of generalised functions 4
Errata 61
House, H., and Pollard, A. F. (See Pollard)
Hughes, M. T. G. Transition-matrix construction for pseudorandom binary-sequence generators 417
Hupert, J. J., and Vigil, J. Evanescent-mode resonator of pure TE mode 569
Hurd, R. A., and Jacobsen, J. Admittance of an infinite cylindrical antenna with realistic gap field 420
Husain, S. A. Resonance-radiation-trapping effects in a pulsed-ion laser 248
Hybrid circuits utilising tunnel diodes and transistors, calculation of the harmonic components of the voltage in. A. Y. Spasov 38
Hybrid computer, multivariable function generation using a. G. C. Barney 419
Hybrid ring, scattering parameters of the 180°. G. Luzzatto 254
Hyperabrupt junctions in Au-Si Schottky diodes by ion implantation. P. Brook and C. S. Whitehead 335

I

I.F. impedance, evaluation of, of the diode from d.c. analysis. Y. Anand and M. Goldman 179
Ibrahim, A. F., and Wright, G. T. (See Wright) 597
Identification des systèmes discrets lineaires monovariable par minimisation d'une distance de structure. (Identification of discrete linear scalar systems by minimisation of a parametric norm). J. Richalet and B. Gimonet 547
Identification des systèmes discrets lineaires multivariables par minimisation d'une distance de structure. (Identification of discrete multivariate systems by minimisation of a parametric norm). F. Lecamus and J. Richalet 549
Identification of discrete linear scalar systems by minimisation of a parametric norm. (Identification des systèmes discrets lineaires monovariables par minimisation) d'une distance de structure). J. Richalet and B. Gimonet 547
Identification of discrete multivariate systems by minimisation of a parametric norm. (Identification des systèmes discrets lineaires multivariables par minimisation d'une distance de structure). F. Lecamus and J. Richalet 549
Identification of process dynamics, learning method for. M. S. Beck 64
Iizuka, K. Mapping of electromagnetic fields by photochemical reaction 68
Illumination patterns, optimum, beam shaping for. S. Cornbleet 501
Illumination taper on the knife-edge diffraction, effect of the. J. Budin 50
Image restoration by aperture-correction techniques. E. M. Deeley 534
IMPATT oscillators, coaxial, magnetic tuning of. J. A. C. Stewart 526
Impedance measurements, application of, in an investigation of a waveguide thermistor mount. J. A. Lane 186
Improved mathematical representation of arc static characteristic. R. E. Crosbie and A. K. Halder 330
Improved methods of asynchronous data compression. R. McCaughern, A. M. Rosie and F. C. Monds 493
Improved near-field discrimination by the use of multiplicative signal-processing in c.t.f.m. radar or sonar. D. G. Tucker and M. J. Withers 245
Improved travelling-wave ZnS light modulator. D. C. Doughty 551
Improving the transient-response characteristics of pulse filters with parabolic distribution of poles. G. G. Anderson and S. C. Dutta Roy. 173
Improvements in near-field discrimination for radar or sonar systems by the use of separate transmitting and receiving arrays. D. E. N. Davies 383
Impulse function of a discrete-time Markov process, uniqueness of the. G. J. Maruschock and M. H. Mickle 375
Impulse response of a linear system, method of minimising the effect of disturbances on the estimate of. C. J. Macleod 220
Imre, U., Brunton, J. D., and Rozelar, A. J. W. (See Brunton)
Indice de Poincaré de points doubles d'une recurrence autonome du deuxième ordre. (Poincare's index for double points of a second-order autonomous recurrence). J. P. Babary, A. Giraud and C. Mira 90
Induction machines, efficient application of D-decom-position techniques to determine stability bound-aries for multiparameter systems, with particular reference to. P. J. Lawrenson, S. R. Bowes and J. M. Stephenson 435
Influence of environment on the convergence of a learning game-playing machine. D. J. Quarmby 244
Initial growth of domains in Gunn oscillators. I. Lundström 120
Input admittance of an insulated antenna in a plasma medium. D. T. Nguyen 561
Instrumentation in duals and analogues. D. G. O. Morris 432
Insulated-gate surface-channel transistor (s.c.l.i.g.f.e.t.), space-charge-limited. G. T. Wright 462
Integrated-circuit distributed RC transfer functions, state-variable synthesis of. E. B. Kozemchak and R. W. Newcomb 320
Integrated circuits, high-speed-logic, simple graphical method to determine line reflections between. M. Abdel-Latif and M. J. O. Strutt 496
Interface switch, electronic/fluidic. R. J. A. Paul and M. H. Lorenz 409
Interface unit, novel cable-drive. B. L. Hart 57
Interference between station identities on WISDOM. P. A. Wing and K. Foster 509
Interferometric techniques, logical operations by. E. Gatti, M. Phadnis and A. Sona 556
Interpolation of the ω axis. C. Beccari 139
Interpolation, real-frequency, with positive-real n ports. M. Wohlers 272
Intervalley scattering model of the Gunn domain. V. Székely and K. Tarnay 592
Inversion numerique de la transformation de Laplace à l'aide des polynômes de Laguerre. (Numerical inversion of the Laplace transform using Laguerre polynomials) 461
Ion implantation, hyperabrupt junctions in Au-Si Schottky diodes by. P. Brook and C. S. Whitehead 335
Ionisation currents in the methyl halides, growth of. S. A. A. Razzak and C. C. Goodyear 54
Ionosphere, ray tracing in the. J. Shmoys 302
Ireland, B., and Marshall, J. E. Matrix method to determine shift-register connections for delayed pseudorandom binary sequences 309
Ireland, B., and Marshall, J. E. Matrix method to determine shift-register connections for delayed pseudorandom binary sequences 467
Isaacs, G. G. Ring-and-line focus electron beams from a glow-discharge gun 405
Ishii, T. K., Kronenwetter, C., Jaskolski, S. V., and Szews, A. P. Performance of laser-beam powered optically commutating motor 304
Isotropic media, electromagnetic wave propagation in spherically stratified. B. S. Westcott 572
Iterative array, data-dependent, binary division using a. K. J. Dean 283
Iterative logical network for parallel multiplication. (Multiplieur parallèle à circuits logique iteratifs). J. C. Hoffman, B. Lacaze and P. Csillag 178
Iterative method of realisation of linearly separable switching functions. P. K. Sinha Roy 118
Iterative procedure for generating trees and directed trees. Wai-Kai Chen 516
Errata 574
Ivanek, F., and Reddi, V. G. K. Modular approach to higher-power avalanche-diode oscillators 446
Izadpanah, S. H., and Hartnagel, H. L. Pulse gain and analogue-to-pulse conversion by Gunn diodes 315

J

Jackson, R. D., and Phillips, B. W. Steady-state stability of the doubly fed synchronous machine 18
Jacobsen, J., and Hurd, R. A. (See Hurd)
Jaggi, R., Middelhoek, S., Mohr, Th., Moser, A., Sasso, G., Sommerhalder, R., Wolf, P., and Drangeid, K. E. (See Drangeid)
James, D. A. Wide-range electronic tuning of a Gunn diode by an yttrium-iron garnet (y.i.g.) ferrimagnetic resonator 451
James J. R. Aperture coupling in cylindrical dielectric-rod antennas. 39
James, J. R. Characterisation of arbitrary media in fields 412
Jamieson, A. R., and Bates, R. H. T (See Bates)
Jashkolski, S. V., Szews, A. P., Ishii, T. K., and Kronenwetter, C. (See Ishii)
Johnson noise on l.s.a. oscillators, effect of. G. S. Hobson 230

Johnson, R. A. General analysis of time-variable delay devices 263
Johnson, S. G. Application of the reverse emitter-base breakdown and saturation of silicon planar transistors 109
Jones, A. R., Stanic, B. V., and Wooding, E. R. Plasma-density determination from the phase shift in scattered radiation 392
Errata 470
Jones, N. B. Comments on Wiener's model of certain nonlinear systems 565
Jones, N. B., and Wood, R. A. (See Wood)
Judd, S. V. Simple repeater for frequency-modulated signals using transferred-electron oscillators 33
Judson, H., Chen, K. M., and Lundquist, R. Measurement of the current distribution of monopoles in a large volume of hot plasma 289
Junction f.e.t.s., effect of operating conditions on reverse gate current of. E. P. Fowler 216
Junctions, hyperabrupt, in Au-Si Schottky diodes by ion implantation. P. Brook and C. S. Whitehead 335

K

Kak, S. C. Fourier, Laplace and Hilbert transforms 396
Errata 574
Kak, S. C. New criterion of realisability 537
Errata 604
Kamp, Y., and Neirynck, J. Cascade synthesis of a multivariable transfer matrix 369
Kamp, Y., and Neirynck, J. Maximally flat approximation for noncommensurate cascaded transmission lines 477
Kamp, Y. Synthesis of a multivariable 2-port using parallel and series stubs 474
Kao, K. C., and Pal, N. Electric conduction in float-zone silicon after prolonged gamma irradiation 571
Karran, J., and Barrett, R. (See Barrett) 538
Errata 604
Kavanagh, R. J. Spectral-matrix factorisation 527
Keen, A. W., Glover, Jacqueline, L., and Harris, R. J. Realisation of the circulator concept using differential-input operational amplifiers 389
Kendall, E. J. M. Trapping levels in silicon nitride 468
Kharadly, M. M. Z., Lewis, J. E., and Bourk, T. R. (See Bourk)
Kharadly, M. M. Z., and Lewis, J. E. (See Lewis)
Kielkiewicz, M. Accuracy of the Volterra-series method for nonlinear differential equations 584
Kim, H. K. Effects of a vanishing variable on the signal-flow graph 501
King, R. J., and Radtke, J. Measurement of surface impedance at microwave frequencies 296
Kino, G. S. Transducer for shear or longitudinal-wave acoustoelectric amplifiers 206
Kitai, R., and Braithwaite, D. Digital statistical analyser for low frequencies 195
Klaschka, T. Optimal use of partial redundancy and the system reliability which results 16
Knibb, T. F., and Eddolls, D. V. (See Eddolls)
Knibb, T. F., Bass, J. C., and Eddolls, D. V. (See Bass)
Knife-edge diffraction, effect of the illumination taper on the. J. Budin 50
Knott, K. F. Conditions for optimum noise performance in l.f. amplifiers employing junction f.e.t.s 92
Knott, K. F. 1/f voltage noise in silicon planar bipolar transistors 555
Knowles, J. B., and Edwards, R. Autocorrelation function of the quantisation-error process for a sinusoid 180
Kodali, V. P. A. M.- and fm. noise characteristics of solid-state microwave-oscillators 147
Kodali, V. P. Fundamental power/frequency limitations of microwave semiconductor devices 311
Kodali, V. P. Skin effect in microwave semiconductor diodes. 67
Kopetz, H., and Pötzl, H. W. Microwave conductivity of polar semiconductors in the presence of a high electric field 79
Koster, A., and Chartier, G. (See Chartier)
Kozemchak, E. B., and Newcomb, R. W. State-variable synthesis of integrated-circuit distributed RC transfer functions 320
Krebs, P., and Ryder, A. Use of a capacitive load in m.o.s. dynamic logic 199
Krikorian, J. S., Jun., and Bickart, T. A. Popov-like stability criterion for a class of time-varying continuous systems 344
Kronenwetter, C., Jaskolski, S. V., Szews, A. P., and Ishii, T. K. (See Ishii)
Krueger, R. J. Synthesis by partial-fraction expansion 192
Krykorka, P. Optimisation of the cascade synthesis of distributed-RC networks 69
Kuchis, E. B., and Wright, G. T. Silicon "punch-through" diode 35
Kumpel, Z. Root-sensitivity invariants 598
Kuno, H. J., Collard, J. R., and Gobat, A. Microwave amplification with GaAs avalanche diodes 540
Kupka, J. Frequency-modulated single-mode laser 31

L

L.S.A.-diode, and Gunn, electrodes, rational design of. J. P. Denker 294
L.S.A. mode, theoretical efficiency of the, for gallium arsenide at frequencies above 10GHz. P. N. Butcher and C. J. Hearn 459
L.S.A. oscillators, effect of Johnson noise on. G. S. Hobson 230
Lacaze, B., Csillag, P., and Hoffman, J. C. (See Hoffman)
Ladbrooke, P. H., and Carroll, J. E. Simple theory for improving the efficiency of Gunn oscillators 83
Laguerre polynomials, numerical inversion of the Laplace transform using. R. Genin and L. C. Calvez 461
Lane, J. A. Application of impedance measurements in an investigation of a waveguide thermistor mount. 186
Laplace, Fourier and Hilbert transforms. S. C. Kak 396
Errata 574
Laplace-Poisson domain interface, determination of. J. A. Magowan and W. D. Ryan 93
Laplace transforms, Taylor-series method of inverting. B. Wise 341
La Rosa, R., and Vasile, C. F. (See Vasile)
Laser-beam modulation using grating diffraction effects. M. Dore 318
Laser beam modulation using grating diffraction effects. J. F. St Ledger and E. A. Ash 99
Laser-beam powered optically commutating motor, performance of. T. K. Ishii, C. Kronenwetter, S. V. Jaskolski and A. P. Szews 304
Laser diodes, GaAs c.w., laser-emission noise and voltage noise of. G. Guekos and M. J. O. Strutt 408
Laser-emission noise and voltage noise of a GaAs c.w. laser diodes. G. Guekos and M. J. O. Strutt 408
Laser, frequency-modulated single-mode. J. Kupka 31
Laser-power measurements, absolute and accurate, wire calorimeter for. R. Nowicki 404
Laser, pulsed-ion, resonance-radiation-trapping effects in. S. A. Husain 248
Lasers, solid-state, two Q switched, synchronisation of. G. Chartier and A. Koster 119
Last, J. D. Switching phenonenon observed in lateral p-n-p transistors 201
Latched 3-port waveguide circulators. L. E. Davis and J. R. Bacon 490
Launcher, coaxial-slot surface-wave. J. C. Beal and W. J. Dewar 557
Lawrenson, P. J., Bowes, S. R., and Stephenson J. M. Efficient application of D-decomposition techniques to determine stability boundaries for multiparameter systems, with particular reference to induction machines 435
Lawrenson, P. J. "Semipole" reluctance motors 376
Laybourn, P. J. R. Group velocity of dielectric waveguide modes 507
Le Moli, G., and Sami, M. G. Symbolic solution of networks by digital computer 481
Learning method for identification of process dynamics. M. S. Beck 64
Learning nets, microcircuit: improved recognition by means of pattern feedback. I. Aleksander and E. H. Mamdani 425
Learning nets, microcircuit: some tests with handwritten numerals. I. Aleksander and R. C. Albrow 406
Leake, R. J., and Weaver, H. J. (See Weaver)
Leake, R. J., Saeks, R., and Liu, R. Time-discrete networks 74
Lecamus, F., and Richalet, J. Identification des systèmes discrets lineaires multivariables par minimisation d'une distance de structure. (Identification of discrete multivariate systems by minimisation of a parametric norm) 549
Lee, B. K., and Hodgart, M. S. Microwave Gunn oscillator tuned electronically over 1 GHz 240
Lee, M. R, and Holt, A. G. J. (See Holt)
Leuenberger, F. 1/f noise in ga'e-controlled planar silicon diodes 280
Leupp, A., and Strutt, M. J. O. Noise behaviour of the m.o.s.f.e.t. at v.h.f. and u.h.f. 313
Levinstein, M. E., and Shur, M. S. Calculation of the parameters of the microwave Gunn generator 233
Levinstein, M. E., Shur, M. S., and Dizhur, D. P. (See Dizhur)
Lewin, L. Amplifying properties of bulk negative-resistance material 145
Lewin, L. Effect of source pattern on wedge diffraction 82
Lewis, J. E., Bourk, T. R., and Kharadly, M. M. Z. (See Bourk)
Lewis, J. E., and Kharadly, M. M. Z. Propagation characteristics of the TM_{01} surface-wave mode in dielectric-lined coaxial cables 228
Ley, J. M., and Webb, R. J. Low-voltage light-amplitude modulation 213
Liao, J. H. Noise in germanium double-injection space-charge-limited diodes 402
Light emitter-modulator device, three-terminal GaAs. F. P. Califano and M. C. Steele 411
Errata 518
Light-intensity modulator, X band travelling-wave, using ZnS crystals. D. C. Doughty 134
Light modulation at video frequencies. A. J. Fox and J. R. Mansell 12
Light modulator, ZnS, improved travelling-wave. D. C. Doughty 551
Line reflections between high-speed-logic integrated circuits, simple graphical method to determine. M. Abdel-Latif and M. J. O. Strutt 496
Linear and circular polarisations, radar propagation factors for various. M. W. Long 5
Linear antennas in a warm plasma driven from a coaxial air-filled transmission line. D. T. Nguyen 475
Linear-p.c.m.-oscillator control systems, phase plane trajectories for. P. C. Parks and M. R. Miller 171
Errata 300
Linear system, method of minimising the effect of disturbances on the estimate of the impulse response of. C. J. Macleod 220
Linear systems with a periodic element, stability theorem for. J. L. Willems 56
Linear systems with a periodic feedback element, two stability criteria for. J. L. Willems 55
Linear systems with time delay, control of. D. Q. Mayne 439
Linear time-invariant systems, algebraic relations between system response and system parameters for. E. V. Bohn and B. Sarkar 159
Lithium-drifted germanium semiconductor detector, anomalous effects in a. G. Walford and C. E. Doust 13
Liu, R., Leake, R. J., and Saeks, R. (See Leake)
Lloyd, O., and Fernando, C. E. Recovery in a multigrid rectifier 513
Löberg, J. O., and Salthouse, E. C. Voltage divisions between nonlinear resistances with positive temperature coefficients 552
Loeb, H. W., Andrew, R., and Love, W. Application of 2-dimensional solutions of the Shockley-Poisson equation to inversion-layer m.o.s.t. devices 352
Logarithmic amplifiers, response of, to noise signals. A. Reiss and G. W. Carver 283
Logic, m.o.s. dynamic, use of a capacitive load in. P. Krebs and A. Ryder 199
Logical arrays, cellular, for extracting square roots. K. J. Dean 314
Logical circuits for use in iterative arrays. K. J. Dean 81
Errata 142
Logical operations by interferometric techniques. E. Gatti, M. Phadnis and A. Sona 556
Lohnert, G. H., Schneider, R. T., and Bloss, W. H. (See Bloss)
Long M. W. Radar propagation factors for various linear and circular polarisations 5
Lorenz, M. H., and Paul, R. J. A. (See Paul)
Love, W., Loeb, H. W. and Andrew, R. (See Loeb)
Low-noise l.f. amplification using a transistor chopper. P. J. Baxandall 14
Lowpass filters, generalised, Chebyshev. R. A. Wood and N. B. Jones 158
Errata 236
Low-power method of adjustment of medium-wave directional antennas. J. V. Surutka 150
Low-voltage light-amplitude modulation. J. M. Ley and R. J. Webb 213
Lundquist, R., Judson, H., and Chen, K. M. (See Judson)
Lundström, I. Initial growth of domains in Gunn oscillators 120
Lunsmann, P. D. Equivalent circuit for the conductance of an m.o.s.f.e.t. 100
Lur'e, extended boundedness for the problem of. S. Weissenberger 489
Lur'e, regions of ultimate boundedness for the problem of. S. Weissenberger 381
Luzzatto, G. Scattering parameters of the 180° hybrid ring 254
Lyapunov functionals for a class of wave equations. G. R. Buis and W. G. Vogt 128
Errata 236
Lyapunov matrix equations with positive-semidefinite input matrices. H. M. Power 325

M

m sequence, autocorrelation function of a 4-level. P. A. N. Briggs and K. R. Godfrey 232
m sequences, binary, proof of the drift-resistant property of. N. Ream 380
m sequences, calculations relating to delayed. A. C. Davies 291
m sequences, delayed versions of. J. L. Douce 254

M.O.S. analogue memory element. W. D. Ryan and A. Reid 73
M.O.S. dynamic logic, use of a capacitive load in. P. Krebs and A. Ryder 199
m.o.s.f.e.t. at v.h.f. and u.h.f., noise behaviour of the. A. Leupp and M. J. O. Strutt 313
M.O.S.F.E.T., equivalent circuit for the conductance of an. P. D. Lunsmann 100
M.O.S.F.E.T.S., test of the thermal-noise hypothesis in. H. E. Halladay and A. Van der Ziel 366
M.O.S.T. devices, inversion-layer, application of 2-dimensional solutions of the Shockley-Poisson equation to. H. W. Loeb, R. Andrew and W. Love 352
M.O.S.T. gain factor, simple measurement of. B. Rowe 437
M.S.M. diode with traps, computed transient solution for the. M. R. Boudry 193
Maanders, E. J., and Dijk, J. (See Dijk)
Macario, R. C. V. High-Qfactor shunt-switched N-path filters 382
McCaughern, R., Rosie, A. M., and Monds, F. C. Improved methods of asynchronous data compression 493
McCaughern, R., Rosie, A. M., and Monds, F. C. Two methods of asynchronous data compression 363
McGee, R. W. Application of frequency-domain stability criteria to certain nonlinear position control systems 536
Macleod, C. J. Method of minimising the effect of disturbances on the estimate of the impulse response of a linear system. 220
McMillan forms from system matrices. H. H. Rosenbrock 374
McMullan, D., and Towler, G. O. Enhancement of s.e.c. target gain in television-camera tubes 542
McMullan, D., and Towler, G. O. Stable s.e.c. target for television camera tubes 360
McNeill, M. C., and Field, C. (See Field)
McStay, J., and Helszajn, J. (See Helszajn)
McStay, J., Taylor, B. C., and Myers, F. A. (See Myers)
Madany, H., and Ryan, W. D. (See Ryan)
Magnetic duplication of video records. W. T. Frost and E. T. Hatley 334
Magnetic tuning of coaxial IMPATT oscillators. J. A. C. Stewart 526
Magnetodynamical modes in a ferrite-filled coaxial cavity. I. Wolff 197
Magnetoionic medium, plane waves in. S. R. Seshadri 121
Magnetostatic surface waves, nonlinear behaviour of. N. J. Freedman and L. K. Brundle 427
Magnetostatic surface waves on a y.i.g. slab. L. K. Brundle and N. J. Freedman 132
Errata 182
Magnetostatic waves in the y. i. g. slab, efficient broadband excitation of the n=0 surface. P. Young 566
Magowan, J. A., and Ryan, W. D. Determination of Laplace-Poisson domain interface 93
Maines, J. D., and Paige, E. G. S. Negative resistance in acoustically amplifying CdS with an S type current/voltage characteristic 450
Mamdani, E. H., and Aleksander, I. (See Aleksander)
Mansell J. R., and Fox A. J. (See Fox)
Mapping of electromagnetic fields by photo-chemical reaction. K. Iizuka 68
Marchesini, G., Mariani, L., and Ciscato, D. (See Ciscato)
Marcum Q function numerical computation, orthogonal polynomial approach for the. M. Pent 563
Mariani, L., Ciscato, D., and Marchesini, G. (See Ciscato)
Markov process, uniqueness of the impulse function of a discrete time. G. J. Maruschock and M. H. Mickle 375
Marks, L. M., and Roberts, G. G. (See Roberts)
Marshall, J. E., and Ireland, B. (See Ireland)
Martin, J. D. Simulation of function with variable poles 594
Martinelli, G., and Di Porto, P. G. Minimal number of nullors for realising active gyrators 273
Martinelli, G., and Poggelli, M. Bounds on magnitude of sensitivity tc variations of component values of passive transfer-voltage ratios. 98
Martinelli, G. Relationships among coefficients of a p.r. function due to the presence of an imaginary pole 349
Maruschock, G. J., and Mickle, M. H. Uniqueness of the impulse function of a discrete-time Markov process 375
Mathams, R. F. Phase-plane analysis of a permanent-magnet stepping motor 103
Matrix equations, Lyapunov, with positive-semidefinite input matrices. H. M. Power 325
Matrix factorisation, spectral. R. J. Kavanagh 527
Matrix method to determine shift-register connections for delayed pseudorandom binary sequences. B. Ireland and J. E. Marshall 309
Matrix method to determine shift-register connections for delayed pseudorandom binary sequences. B. Ireland and J. E. Marshall 467
Matrix transformation $A = (B + I)(B - I)^{-1}$ two applications of the, in dynamical system theory. H. M. Power 479
Matrices, relatively prime polynomial. H. H. Rosenbrock 227
Maurer, S. J., and Felsen, L. B. (See Felsen)
Maximally flat approximation for noncommensurate cascaded transmission lines. Y. Kamp and J. Neirynck 477
Maximum available power gain of active 2-ports. S. Venkateswaran and P. S. Sarma 278
Errata 518
Maximum-speed s.t.t. state assignments for sequential machines. D. P. Burton and D. R. Noaks 464
Mayne, D. Q. Control of linear systems with time delay 439
Meade, M. L., and Faulkner, E. A. (See Faulkner)
Mean detector for slow fluctuations. H. Sutcliffe 97
Measurement of current pulses due to discharges in a gaseous cavity in solid dielectric. B. Salvage and O. Tapupere 529
Measurement of donor density by pulsing Schottky-barrier diodes. J. E. Carroll 259
Measurement of surface impedance at microwave frequencies. R. J. King and J. Radtke 296
Measurement of the current distribution of monopoles in a large volume of hot plasma. H. Judson, K. M. Chen and R. Lundquist 289
Measurement of waveguide attentuation by resonance methods. T. R. Bourk, M. M. Z. Kharadly and J. E. Lewis 267
Medium-wave directional antennas, low-power method of adjustment of. J. V. Surutka 150
Mehta, K. S., and Venugopal, M. State-dependent current source stretches timer pulse widths 531
Memory element, m.o.s. analogue. W. D. Ryan and A. Reid 73
Mercury at low pressures, hollow cathode discharges in. R. V. Young 66
Mercury discharge measured by ultraviolet absorption, transient neutral depletion in a constricted low-pressure. J. E. Aitken and K. F. Sander 426
Mercury-vapour plasma in the late-afterglow region, determination of the ambipolar diffusion coefficient of. A. G. Heaton and D. K. Pal 455
Method of aligning code translators used in digital transmission. J. M. Griffiths 495
Method of minimising the effect of disturbances on the estimate of the impulse response of a linear system. C. J. Macleod 220
Method of testing the quality of bars of single-crystal yttrium-iron garnet. C. F. Vasile and R. La Rosa 400
Methyl halides, growth of ionisation currents in the. S. A. A. Razzak and C. C. Goodyear 54
Mickle, M. H., and Maruschock, G. J. (See Maruschock)
Mickle, M. H., and Vogt, W. G. (See Vogt)
Microcircuit learning nets: improved recognition by means of pattern feedback. I. Aleksander and E. H. Mamdani 425
Microcircuit learning nets: some tests with handwritten numerals. I. Aleksander and R. C. Albrow 406
Microcircuit patterns, holographic projection of. M. J. Beesley, H. Foster and K. G. Hambleton 49
Microstrip, high Q factor resonators in. P. Troughton 520
Microwave aerials, eliminating the effect of site reflections on radiation patterns of. T. K. Fitzsimons 348
Microwave amplification with GaAs avalanche diodes. H. J. Kuno, J. R. Collard and A. Gobat 540
Microwave attenuation with Gunn-effect samples, continuously variable. H. Pollman and B. G. Bosch 317
Microwave-biased photoconductive detector, Q band. D. V. Eddolls and T. F. Knibb 337
Microwave-biased photodetector system with an integral Gunn-effect oscillator. J. C. Bass, D. V. Eddolls and T. F. Knibb 429
Microwave cavity, vacuum breakdown at a ceramic surface in a. F. S. Chute and G. B. Walker 395
Microwave conductivity of polar semiconductors in the presence of a high electric field. H. Kopetz and H. W. Pötzl 79
Microwave Gunn generator, calculation of the parameters of the. M. E. Levinstein and M. S. Shur 233
Microwave Gunn oscillator tuned electronically over 1 GHz. B. K. Lee and M. S. Hodgart 240
Microwave oscillations, fundamental, in epitaxial GaAs by control of space-charge growth. B. C. Taylor and S. E. Gibbs 471
Microwave oscillations, high-efficiency, from Si avalanche diodes. M. I. Grace and G. Gibbons 564
Microwave oscillators, solid state, a.m.- and f.m.-noise characteristics. V. P. Kodali 147
Microwave power, parallel-fed c.w. Gunn oscillators cascaded in X band waveguide for higher. S. Boronski 185
Microwave radiometry, stable broadband variable noise source for. D. L. Hollway and P. I. Somlo 24
Microwave semiconductor devices, fundamental power/frequency limitations of. V. P. Kodali 311
Microwave semiconductor diodes, skin effect in. V. P. Kodali 67
Microwave silicon Schottky-barrier field-effect transistor. K. E. Drangeid, R. Jaggi, S. Middelhoek, Th. Mohr, A. Moser, G. Sasso, R. Sommerhalder and P. Wolf 362
Microwave transistors, optimum source admittance for minimum noise figure of. W. Bächtold and M. J. O. Strutt 346
Microwave transistors, simplified equivalent circuit for the noise-figure calculation of. W. Bächtold and M. J. O. Strutt 209
Middelhoek, S., Mohr, Th., Moser, A., Sasso, G., Sommerhalder, R., Wolf, P., Drangeid, K. E., and Jaggi, R. (See Drangeid)
Midgley, D. Electronic control of alternator excitation by gyrators and nonreciprocal networks 101
Milić, M. M. Simple proof of unconditional controllability and observability 526
Miller, M. R., and Parks, P. C. (See Parks)
Miller, P. Computation of polar diagrams from paraboloidal reflector aerials with systematic deformations 398
Millington, G., and Brown, J. (See Brown)
Minimal number of nullors for realising active gyrators. G. Martinelli and P. G. Di Porto 273
Mink, J. W., and Christian, J. R. Dual-mode optical-frequency discriminator 246
Mira, C., Babary, J. P., and Giraud, A. (See Babary) 90
Mitchell, R. F., and Redwood, M. Frequency response of a distributed piezoelectric source of sound 107
Mitra, S. K. Voltage-transfer-function matrix realisation using operational amplifiers 435
Mobile ions, removal of, from the insulator layer of thin-film transistors. O. O. Turriff and J. Bradley 312
Modal analysis of irregular terrain effects in radio propagation and the ray interpretation. J. R. Wait 367
Modes in curved nonuniform waveguides, ray interpretation of. L. B. Felsen and S. J. Maurer 70
Modified theory of the current/voltage relation in silicon p-n junctions. E. A. Faulkner and M. J. Buckingham 359
Modular approach to higher-power avalanche-diode oscillators. F. Ivanek and V. G. K. Reddi 446
Modulation, laser-beam, using grating diffraction effects. M. Dore 318
Modulation, low-voltage light-amplitude. J. M. Ley and R. J. Webb 213
Modulation using grating diffraction effects, laser-beam. J. F. St. Ledger and E. A. Ash 99
Modulator, "Wisdom"—self-synchronising delta-modulation orthogonal-channel modulator. P. A. Wing 211
Modulator, ZnS light, improved travelling-wave. D. C. Doughty 551
Mohr, Th., Moser, A., Sasso, G., Sommerhalder, R., Wolf, P., Drangeid, K. E., Jaggi, R., and Middelhoek, S. (See Drangeid)
Mok, C. K. Diaphragms in evanescent waveguides 43
Monds, F. C., McCaughern, R., and Rosie, A. M. (See McCaughern)
Monopoles, measurement of the current distribution of, in a large volume of hot plasma. H. Judson, K. M. Chen and R. Lundquist 289
Monotron oscillator, frequency stability of, with superconducting cavity. F. Biquard, P. Grivet and A. Septier 143
Morris, D. G. O. Instrumentation in duals and analogues 432
Moser, A., Sasso, G., Sommerhalder, R., Wolf, P., Drangeid, K. E., Jaggi, R., Middelhoek, S., and Mohr, Th. (See Drangeid)
Motor, phase-plane analysis of a permanent-magnet stepping. R. F. Mathams 103
Multigrid rectifier, recovery in a. O. Lloyd and C. E. Fernando 513
Multiplex, correlation, data-transmission system. R. Barrett and J. Karran 538
Errata 604
Multiplier arrays, versatile. K. J. Dean 333
Multiplier, f.e.t., temperature-compensated. M. M. Abu-Zeid, H. Groendijk and A. Willemse 324
Multiplier, high-speed iterative. D. P. Burton and D. R. Noaks 262
Multiplieur parallèle à circuits logique iteratifs. (Iterative logical network for parallel multiplication). J. C. Hoffman, B. Lacaze and P. Csillag 178
Multivariable function generation using a hybrid computer. G. C. Barney 419
Multivariable system, linear, differential equation for a linear combination of variables in a. H. M. Power 524
Multivariable 2-port synthesis of a, using a parallel and series stubs. Y. Kamp 474
Murray-Shelley, R. Determination of pulse distortion in transmission-line systems having reactive terminations using the graphical method 589
Mutually synchronised system, operation modes in. T. Saito 76
Myers, F. A., McStay, J., and Taylor, B. C. Variable-length Gunn oscillator 386

N

N-path filters, high-Qfactor shunt-switched. R. C. V. Macario 382
N.I.C. circuits and gyrators, generalisation of the symmetry properties of. R. Genin and C. Fravalo 116
Narayan, S. Y., and Gobat, A. R. High-bias-voltage operation of GaAs transferred-electron oscillators 504
Narrow-bandpass filtering with modulation. R. K. P. Galpin 165
Negative-mobility amplifiers, bulk, transit time effects in. D. Dascalu 581
Negative mobility devices, effect of the field-dependence of the diffusion constant on small-signal behaviour of bulk. Y. Nishimura 249
Negative resistance in acoustically amplifying Cds with an S type current voltage characteristic. J. D. Maines and E. G. S. Paige 450
Negative-resistance amplifiers using three-terminal Gunn devices. F. P. Califano 568
Negative-resistance material, bulk, amplifying properties of. L. Lewin 145
Negative resistance, single injection, double injection and, in gold-doped high-resistivity silicon. G. T. Wright and A. F. Ibrahim 597
Neill, T. B. M. Sensitivity analysis in computer-aided design of linear circuits 316
Errata 370
Neirynck, J., and Kamp, Y. (See Kamp)
Network for parallel multiplication, iterative logical. J. C. Hoffman, B. Lacaze and P. Csillag 178
Network functions, summed sensitivity of. A. G. J. Holt and J. K. Fidler 85
Network, time-axis expanding. A. G. J. Holt and C. Nightingale 319
Networks, circulator-capacitor. J. M. Rollett 599
Networks containing nullators and norators, simplified topological solutions of. G. S. Brayshaw 276
Errata 342
Networks, optimally sensitive. A. G. J. Holt and J. K. Fidler 176
Networks symbolic solution of by digital computer G. Le Moli and M. G. Sami 481
Networks, time-discrete. V. Dvorák 222
Networks, time-discrete. R. J. Leake, R. Saeks and R. Liu 74
Networks, voltage gain in passive RC series-parallel 3-terminal. R. Nouta and K. M. Adams 276
Neumann, E.-G. Portrayal of the field at the junction between a Yagi structure and a dielectric-rod transmission line 295
New class of magnitude/frequency convertors. F. Bombi and D. Ciscato 453
New class of pseudorandom ternary sequences. P. A. N. Briggs and K. R. Godfrey 438
Errata 518
New criterion of realisability. S. C. Kak 537
Errata 604
New experiments on the behaviour of the hybrid TEM-dual surface wave in a coaxial cable. H. M. Barlow and Mira Sen 523
New gyrator circuits obtained by using nullors. A. Antoniou 87
New results for time averages as statistical averages. J. E. Brignell 113
New results for time averages as statistical averages. H. E. Hanrahan 34
New results for time averages as statistical averages. H. E. Hanrahan 114
Newcomb, R. W., and Kozemchak, E. B. (See Kozemchak)
Newton, B. H., Corbey, C. D., and Davies, R. (See Corbey)
Nguyen, D. T. Current waves on an infinite cylindrical antenna in a warm plasma 94
Nguyen, D. T. Linear antennas in a warm plasma driven from a coaxial air-filled transmission line 475
Nguyen, H. P. Coupled antennas in a dissipative medium 486
Nguyen, H. P. Solution of antenna problems by Fourier-series expansion 354
Nicholson, H. Eigenvalue and control-law trajectories for a turboalternator model under fault conditions 9
Nicholson, H. Quadrature-axis rotor excitation of a turboalternator model under fault conditions 60
Nicoll, G. R. Topology of a store-and-forward net 126
Nightingale, C., and Holt, A. G. J. (See Holt)
Nishimura, Y. Effect of the field-dependence of the diffusion constant on small-signal behaviour of bulk negative-mobility devices 249
Noaks, D. R., and Burton, D. P. (See Burton)
Noise behaviour of the m.o.s.f.e.t. at v.h.f. and u.h.f. A. Leupp and M. J. O. Strutt 313
Noise-figure calculation of microwave transistors, simplified equivalent circuit for. W. Bächtold and M. J. O. Strutt 209
Noise figure of microwave transistors, optimum source admittance for minimum. W. Bächtold and M. J. O. Strutt 346
Noise, flicker, in Gunn diodes. E. A. Faulkner and M. L. Meade 226
Noise in a germanium double-injection space-charge-limited diodes. J. H. Liao 402
Noise in transistor amplifiers, reduction of flicker. E. A. Faulkner and J. B. Grimbleby 80
Noise-measuring system, calibration of an oscillator. J. Polivka 190
Noise, 1/f, in gate-controlled planar silicon diodes. F. Leuenberger 280
Noise, 1/f voltage, in silicon planar bipolar transistors. K. F. Knott 555
Noise performance in 1 f. amplifiers employing junction f.e.t.s., conditions for optimum. K. F. Knott 92
Noise signals, response of logarithmic amplifiers to. A. Reiss and G. W. Carver 283
Noise source for microwave radiometry, stable broadband variable. D. L. Hollway and P. I. Somlo 24
Noise sources, semiconductor-diode v.h.f. and u.h.f. D. E. Susans 72
Noiselike waveforms generated by a digital technique, probability distributions of. A. C. Davies 421
Nonlinear behaviour of magnetostatic surface waves. N. J. Freedman and L. K. Brundle 427
Nonlinear resistances with positive temperature coefficients, voltage divisions between. J. O. Löberg and E. C. Salthouse 552
Nonlinear systems, certain, comments on Wiener's model of. N. B. Jones 565
Nonlinear systems, stability of a class of. M. S. Davies 322
Nonreciprocal circular polariser using hexagonal ferrites with planar anisotropy. J. Helszajn and J. McStay 184
Nonreciprocal networks, electronic control of alternator excitation by gyrators. D. Midgley 101
Norators, and nullators, simplified topological solutions of networks containing. G. S. Brayshaw 276
Errata 342
Nouta, R., and Adams, K. M. Voltage gain in passive RC series-parallel 3-terminal networks 276
Novel cable-drive interface unit. B. L. Hart 57
Nowak, D. J., Schmid, P. E., and Henkel, D. P. (See Henkel)
Nowicki, R. Wire calorimeter for absolute and accurate laser-power measurements 404
Nullators and norators, simplified topological solutions of networks containing. G. S. Brayshaw 276
Errata 342
Nullors for realising active gyrators, minimal number of. G. Martinelli and P. G. Di Porto 273
Nullors, new gyrator circuits obtained by using. A. Antoniou 87
Numerical computation, Marcum Q function, orthogonal polynomial approach for the. M. Pent 563
Numerical study of avalanche multiplication in silicon p-n abrupt junctions. (Étude numerique de la multiplication par avalanche dans les jonctions p-n abruptes au silicium). J. Urgell 447
Nyugen, D. T. Input admittance of an insulated antenna in a plasma medium 561

O

Observability and controllability, simple proof of unconditional. M. M. Milić 526
1/f noise in gate-controlled planar silicon diodes. F. Leuenberger 280
1/f voltage noise in silicon planar bipolar transistors. K. F. Knott 555
Online digital filtering. A. Buttle, A. G. Constantinides, and J. E. Brignell 252
Onn, P. Carrier-frequency generation using regular pulse sequences 338
Operation modes in mutually synchronised system. T. Saito 76
Operational amplifiers, realisation of the circulator concept using differential-input. A. W. Keen, Jacqueline L. Glover and R. J. Harris 389
Operational amplifiers, 3-terminal gyrator circuits using. A. Antoniou 591
Operational amplifiers, voltage-transfer-function matrix realisation using. S. K. Mitra 435
Optimal use of partial redundancy and the system reliability which results. T. Klaschka 16
Optimally sensitive networks. A. G. J. Holt and J. K. Fidler 176
Optimisation of the cascade synthesis of distributed-RC networks. P. Krykorka 69
Optimisation of the ground wave over a stratified earth. J. R. Wait 575
Optimisation technique in delay-equaliser design by digital computer. B. D. Rakovich 123
Optimising the blocking efficiency in shaped Cassegrain systems. J. Dijk and E. J. Maanders 372
Optimum noncommensurate stepped transmission-line transformers. J. W. Bandler 212
Optimum source admittance for minimum noise figure of microwave transistors. W. Bächtold and M. J. O. Strutt 346
Orthogonal polynomial approach for the Marcum Q function numerical computation. M. Pent 563
Oscillations, high-efficiency microwave, from Si avalanche diodes. M. I. Grace and G. Gibbons 564
Osnaghi, S. Effects of the channel profile on correlation measurements 111
Oscillating circuit, parametric resonance in an, utilising nonlinear capacitance. A. Y. Spasov 264
Oscillating circuit utilising nonlinear capacitance, forced oscillations in an. A. Y. Spasov 365
Oscillator, efficiency of the transistor transit-time. G. T. Wright 217
Oscillator, monotron, frequency stability of, with superconducting cavity. F. Biquard, P. Grivet and A. Septier 143
Oscillator noise-measuring system, calibration of. J. Polivka 190
Oscillator, transit-time, 'punch-through'. G. T. Wright 543
Oscillators, avalanche-diode, modular approach to higher-power. F. Ivanek and V. G. K. Reddi 446
Oscillators, coaxial IMPATT, magnetic tuning of. J. A. C. Stewart 526
Oscillators for wideband electronic control of frequency, triangular- and trapezium-waveform. F. H. Wells and C. Sharpe 7
Oscillators, high-efficiency operation of avalanche-diode. R. A. Giblin 52
Oscillators, l.s.a. effect of Johnson noise on. G. S. Hobson 230
Oscillators, simple repeater for frequency-modulated signals using transferred-electron. S. V. Judd 33
Oscillators, solid state microwave, a.m.- and f.m.-noise characteristics of. V. P. Kodali 147

P

P.C.M.-oscillator control systems, linear, phase-plane trajectories for. P. C. Parks and M. R. Miller 171
Errata 300
P. C. M.-oscillator control systems, stability of. P. C. Parks and M. R. Miller 21
p-n abrupt junctions, silicon, numerical study of avalanche multiplication in. J. Urgell 447
P-N junction as an ultralinear calculable thermometer. T. C. Verster 175
p-n junctions and transistors, diffusion capacitance of. C. D. Bulucea 559
p-n junctions, excess current in, associated with surface states. D. Esteve 305
P-N junctions, silicon, modified theory of the current/voltage relation in. E. A. Faulkner and M. J. Buckingham 359
P-N-P transitors, lateral, switching phenomenon observed in. J. D. Last 201
P.R. function, relationships among coefficients of a, due to the presence of an imaginary pole. G. Martinelli 349
P. R. B. N. crosscorrelation, practical study of drift correction in. R. F. Brown 588
Pace, J. R. Aperture blockage by a subreflector in a Cassegrain antenna system 500
Paige, E. G. S., and Maines, J. D. (See Maines)
Pal, D. K., and Heaton, A. G. (See Heaton)
Pal, N., and Kao, K. C. (See Kao)
Parabolic reflectors, some results of an electronic compensation for surface profile errors in. D. E. N. Davies and A. W. Rudge 433
Parallel-fed c.w. Gunn oscillators cascaded in X band waveguide for higher microwave power. S. Boronski 185
Parallel, Gunn effect with two samples. P. Guetin 63
Parametric amplifier, cooled broadband, at 4 GHz. C. Field and M. C. McNeill 271
Parametric amplifier, possible Gunn-effect. C. S. Aitchison 15
Parametric amplifier, varactor harmonic-generator chain as a pump source for a, C. D. Corbey, R. Davies and B. H. Newton 397
Parametric resonance in an oscillating circuit utilising nonlinear capacitance. A. Y. Spasov 264
Parks, P. C., and Miller, M. R. Phase-plane trajectories for linear-p.c.m.-oscillator control systems 171
Errata 300
Parks, P. C., and Miller, M. R. Stability of p.c.m.-oscillator control systems 21
Partial-fraction expansion, synthesis by. R. J. Krueger 192
Partial redundancy and the system reliability which results, optimal use of. T. Klaschka 16
Pattern recognition, error-correcting algorithm for adapting a hyperelliptical decision surface. B. G. Batchelor and B. R. Wilkins 204
Errata 300
Paul, R. J. A., and Lorenz, M. H. Electronic/fluidic interface switch 409
Pent, M. Orthogonal polynomial approach for the Marcum Q function numerical computation 563
Performance index based on the correlation between the responses of two systems. B. Sarkar 6
Errata 142

Performance-index evaluation, time-weighted. B. D. O. Anderson 174
Performance integrals, comments on method of evaluating time-weighted. H. M. Power 3
Performance of laser-beam powered optically commutating motor. T. K. Ishii, C. Kronenwetter, S V. Jaskolski and A. P. Szews 304
Peter, G., Messiaen, A. M., and Vandenplas, P. E. (See Messiaen)
Phadnis, M., Sona, A., and Gatti, E. (See Gatti)
Phase compensation in electronic gyrator circuits. H. Th. Van Looij and K. M. Adams 430
Phase-lock loop systems, threshold improvements for. J. J. Uhran Jun 203
Phase-locked loop, experimental signal/noise-ratio comparison of the second-order, and the second-order frequency-locked loop. M. G. Unkauf and R. J. Schulman 585
Phase-plane analysis of a permanent-magnet stepping motor. R. F. Mathams 103
Phase-plane trajectories for linear-p.c.m.-oscillator control systems. P. C. Parks and M. R. Miller 171
Errata 300
Phase shifter, digital, comments on quarter-wave transformer for, F. E. Gardiol 149
Phillips, B. W., and Jackson, R. D. (See Jackson)
Photochemical reaction, mapping of electromagnetic fields by. K. Iizuka 68
Photoconductive detector, Q band microwave-biased. D. V. Eddolls and T F. Knibb 337
Photodetector system, microwave-biased, with an integral Gunn-effect oscillator. J. C. Bass, D. V. Eddolls and T. F. Knibb 429
Photoelectric determination of the difference between work functions of metals. A. Tosser 168
Photoelectric restoring system for images degraded by atmospheric turbulence. W. H. Bloss, G. H. Lohnert and R. T. Schneider 292
Photon-phonon interactions, coherent. J. W. Gardner 379
Piezoelectric semiconductors, circuit-controlled modes of acoustoelectric oscillations in. C. W. Turner and D. R. Bryson 270
Piezoelectric source of sound, frequency response of a distributed. R. F. Mitchell and M. Redwood 107
Piezoelectric thin film transducer, calculation of the bandshape factor of. J. Trotel, E. Dielesaint and B. Autin 156
Pinch–in effect, and edge injection, of transistors with cylindrical geometry. H.-M. Rein 553
Planar silicon diodes, 1/f noise in gate-controlled. F. Leuenberger 280
Plane waves in a magnetoionic medium. S. R. Seshadri 121
Plasma around an antenna, resonantly h.f.-sustained. A. M. Messiaen, P. E. Vandenplas and G. Peter 29
Plasma, current waves on an infinite cylindrical antenna in a warm. D. T. Nguyen 94
Plasma-density determination from the phase shift in scattered radiation. A. R. Jones, B. V. Stanic and E. R. Wooding 392
Errata 470
Plasma-guide mode, field distribution of the forward-wave, on a magnetised plasma column. K. C. Gupta and A. Singh 378
Plasma, hot, measurement of the current distribution of monopoles in a large volume of. H. Judson, K. M. Chen and R. Lundquist 289
Plasma medium, input admittance of an insulated antenna in a. D. T. Nguyen 561
Plasma, mercury-vapour, in the late-afterglow region, determination of the ambipolar diffusion coefficient of. A. G. Heaton and D. K. Pal 455
Plasma sheath, overdense, coupling between mutually orthogonal slot antennas covered by. P. F. Sforza 243
Plasma, warm, linear antennas in a, driven from a coaxial air-filled transmission line. D. T. Nguyen 475
Plasmas behaviour of separation constants for finite gyromagnetic. V. Bevc 58
Poggelli, M., and Martinelli, G. (See Martinelli)
Poincaré's index for double points of a second-order autonomous recurrence. (Indice de Poincaré de points doubles d'une recurrence autonome du deuxième ordre) J. P. Babary, A. Giraud and C. Mira 90
Point-contact diode in the submillimetre range, spectral response of a. E. J. S. Becklake, L. A. Cram and B. E. Prewer 601
Polariser, nonreciprocal circular, using hexagonal ferrites with planar anisotropy. J. Helszajn and J. McStay 184
Polivka, J. Calibration of an oscillator noise-measuring system 190
Pollard, A. F. and House, H. Fast-response automatic ellipsometer 166
Pollman, H., and Bosch, B. G. (See Bosch)
Pollmann, H., and Bosch, B. G. Continuously variable microwave attentuation with Gunn-effect samples 317
Polynomial matrices, some properties of relatively prime. H. H. Rosenbrock 374
Ponder, A. C. Design of feedback networks by the use of 2-port methods 89
Popov-like stability criterion for a class of time-varying continuous systems. J. S. Krikorian, Jun., and T. Bickart 344
Portrayal of the field at the junction between a Yagi structure and a dielectric-rod transmission line. E.-G. Neumann 295
Positive temperature coefficients, voltage divisions between nonlinear resistances with. J. O. Löberg and E. C. Salthouse 552
Possible Gunn-effect parametric amplifier. C. S. Aitchison 15
Possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in a coaxial cable having an electrically loaded inner conductor. H. M. Barlow 153
Possible physical explanation of the observed behaviour of the hybrid TEM-dual surface wave in a coaxial cable having an electrically loaded inner conductor. H. M. Barlow 185
Pötzl, H. W., and Kopetz, H. (See Kopetz)
Powell, K. J., and Easter, B. (See Easter)
Power/frequency limitations, fundamental, of microwave semiconductor devices. V. P. Kodali 311
Power gain of active 2-ports, maximum available. S. Venkateswaran and P. S. Sarma 278
Errata 518
Power, H. M. Comments on method of evaluating time-weighted performance integrals 3
Power, H. M. Differential equation for a linear combination of variables in a linear multivariable system 524
Power, H. M. Lyapunov matrix equations with positive-semidefinite input matrices 325
Power, H. M. Two applications of the matrix transformation $A = (B + I)(B - I)^{-1}$ in dynamical system theory. H. M. Power 479
Power lines, raised trigonometric and hyperbolic. A. G. J. Holt and P. Bowron 140
Errata 236
Practical study of drift correction in p. r. b. n. crosscorrelation. R. F. Brown 588
Prajoux, R., Sevely, Y., and Thierry, P. Transmittance en z d'asservissements échantillonnés à signal d'erreur discontinu. (z transfer functions of sampled-data control systems with a discontinuous error signal). 242
Precorrection, digital filter, for zero-order hold distortion. D. P. Henkel, D. J. Nowak and P. E. Schmid 514
Predistortion technique, active filters using a. B. Wise 25
Prewer, B. E., Becklake, E. J. S., and Cram, L. A. (See Becklake)
Probability distributions of noiselike waveforms generated by a digital technique. A. C. Davies 421
Process dynamics, learning method for identification of. M. S. Beck 64
Products of generalised functions. R. F. Hoskins 4
Errata 61
Proof of the drift-resistant property of binary m sequences. N. Ream 380
Propagation characteristics of the TM_{01} surface-wave mode in dielectric-lined coaxial cables. J. E. Lewis and M. M. ?. Kharadly 228
Propagation-constant measurements, surface-wave. R. G. Fitzgerrell 286
Proposed Gunn-effect switch. R. W. H. Engelmann and W. Heinle 190
Pseudorandom binary sequences, delayed, matrix method to determine shift register connections for. B. Ireland and J. E. Marshall 309
Pseudorandom binary-sequence generators, transition-matrix construction for. M. T. G. Hughes 417
Pseudorandom binary sequences, matrix method to determine shift-register connections for delayed. B. Ireland and J. E. Marshall 467
Pseudorandom binary signals, elimination of quadratic drift errors in system identification by. H. A. Barker 255
Pseudorandom ternary sequences, new class of. P. A. N. Briggs and K. R. Godfrey 438
Errata 518
Pulse distortion, determination of, in transmission-line systems having reactive terminations using the graphical method. R. Murray-Shelley 589
Pulse-duration modulation to provide a central linear region, bang-bang controller using. P. Atkinson, R. L. Davey and P. B. Fellget 105
Pulse filters with parabolic distribution of poles, improving the transient-response characteristics of. G. G. Anderson and S. C. Dutta Roy 173
Pulse gain and analogue-to-pulse conversion by Gunn diodes. S. H. Izadpanah and H. L. Hartnagel 315
Pulse sequences, regular, carrier-frequency generation using. P. Onn 338
Pulsed frequency-response calculations for a digital control system. R. Edwards 19
Errata 41
Pumped oscillators, experimental analysis of high-efficiency avalanche-resonance. C. P. Snapp, L. A. Stark and B. Hoefflinger 595
'Punch-through' transit-time oscillator. G. T. Wright 543

Q band frequencies, Gunn-diode operation at. P. D. Clark and F. J. Hilsden 482
Q band microwave-biased photoconductive detector. D. V. Eddolls and T. F. Knibb 337
Quadrature-axis rotor excitation of a turbo-alternator model under fault conditions. H. Nicholson 60
Quadrature network, simplified. M. H. Ackroyd 105
Errata 142
Quantisation-error process for a sinusoid, autocorrelation function of the. J. B. Knowles and R. Edwards 180
Quantiser, equivalent gain of an instantaneous, with two independent random inputs. L. Giacomelli and M. Dècina 269
Quarmby, D. J. Influence of environment on the convergence of a learning game-playing machine 244
Quarter-wave transformer, comments on, for a digital phase shifter. F. E. Gardiol 149

R

RC elements, distributed, with rational short-circuit matrices. S. Rizek 458
RC filters, active, with differential integrators. D. Wolff 428
RC network, response of an. P. M. Foster 483
RC networks, active, using a parallel T. N. Fujii 239
RC networks, summed sensitivity of active. A. G. J. Holt and M. R. Lee 298
R. F.- and p.l. modulated incoherent carrier, some results for. J. Das and S. C. Bose 48
Errata 342
Radar measurement of Faraday rotation, towards reducing errors in. R. H. T. Bates and A. R. Jamieson 155
Radar or sonar, improved near-field discrimination by the use of multiplicative signal-processing. D. G. Tucker and M. J. Withers 245
Radar or sonar systems, improvements in near-field discrimination for, by the use of separate transmitting and receiving arrays. D. E. N. Davies 383
Radar propagation factors for various linear and circular polarisations. M. W. Long 5
Radiation patterns, effects of large parasitic loops on Alford-loop counterpoise. D. L. Sen Gupta and J. E. Ferris 223
Radiation patterns of microwave aerials, eliminating the effect of site reflections on. T. K. Fitzsimons 348
Radio-frequency transistor amplifier, high-power. P. Rohan, M. Viola, E. Templar and J. Wilcox 442
Radio propagation and the ray interpretation, modal analysis of irregular terrain effects in. J. R. Wait 367
Radtke, J., and King, R. J. (See King)
Raised trigonometric and hyperbolic power lines. A. G. J. Holt and P. Bowron 140
Errata 236
Raju, G. V. S. Synthesis of minimal (irreducible) realisations 473
Rakovich, B. D. Optimisation technique in delay-equaliser design by digital computer 123
Random delays, transformation of time series of events by. M. ten Hoopen 282
Randverdrängung und Einschnürung bei Transistoren mit zylindrischer Geometrie (Edge injection and pinch-in effect of transistors with cylindrical geometry). H.-M. Rein 553
Rao, K. R., and Ahmed, N. (See Ahmed)
Rational design of Gunn- and l.s.a.-diode electrodes. S. P. Denker 294
Ratz, H. C., and Voldner, P. (See Voldner)
Ray interpretation of modes in curved non-uniform waveguides. L. B. Felsen and S. J. Maurer 70
Ray tracing in the ionosphere. J. Shmoys 302
Razzak, S. A. A., and Goodyear, C. C. Growth of ionisation currents in the methyl halides 54
Real-frequency interpolation with positive-real n ports. M. Wohlers 272
Realisability, new criterion of. S. C. Kak 537
Errata 604
Realisation of the circulator concept using differential-input operational amplifiers. A. W. Keen, Jacqueline L. Glover and R. J. Harris 389
Ream, N. Proof of the drift-resistant property of binary m sequences 380
Reciprocity relationship for bianisotropic media, general form of the. G. P. Bava 299
Reciprocity theorem, using the, for antenna calculations. K. G. Balmain 301
Recovery in a multigrid rectifier. O. Lloyd and C. E. Fernando 513
Reddi, V. G. K., and Ivanek, F. (See Ivanek)
Reddy, D. C. Eigenfunctions and the solution of sensitivity equations 262
Reduction of flicker noise in transistor amplifiers. E. A. Faulkner and J. B, Grimbleby 80
Reduction of order of linear state equations. R. F. Brown 41

Redwood, M., and Mitchell, R. F. (See Mitchell)
Rees, H. D Bulk-material device with current-controlled negative resistance 532
Reflector aerials, paraboloidal, with systematic deformations, computation of polar diagrams from. P. Miller 398
Regions of ultimate boundedness for the problem of Lur'e. S. Weissenberger 381
Reid, A., and Ryan W. D. (See Ryan)
Reiss, A., and Carver, G. W. Response of logarithmic amplifiers to noise signals 283
Rein, H.-M. Randverdrängung und Einschnürung bei Transitoren mit zylindrischer Geometrie (Edge injection and pinch-in effect of transistors with cylindrical geometry) 553
Relationship between direct-coupled waveguide filters and evanescent-mode filters. G. Craven 44
Relationships among coefficients of a p.r. function due to the presence of an imaginary pole. G. Martinelli 349
Relatively prime polynomial matrices. H. H. Rosenbrock 227
Relatively prime polynomial matrices, some properties of. H. H. Rosenbrock 374
Reliability parameters of equipment with a general repair-time distribution. F. Hoff 391
Errata 470
Reluctance motors, "Semipole". P. J. Lawrenson 376
Removal of mobile ions from the insulator layer of thin-film transistors. O. O. Turriff and J. Bradley 312
Resistive networks with single sinusoidal inputs, subharmonics produced in. A. G. J. Holt and C. Nightingale 152
Resonance methods, measurement of waveguide attentuation by. T. R. Bourk, M. M. Z. Kharadly and J. E. Lewis 267
Resonance-radiation-trapping effects in a pulsed-ion laser. S. A. Husain 248
Resonantly h.f.-sustained plasma around an antenna. A. M. Messiaen, P. E. Vandenplas and G. Peter 29
Resonator, evanescent-mode, of pure TE mode. J. J. Hupert and J. Vigil 569
Resonator filters, direct-coupled, with improved selectivity. B. Easter and K. J. Powell 415
Resonators, high Q factor, in microstrip. P. Troughton 520
Response of an RC network. P. M. Foster 483
Response of logarithmic amplifiers to noise signals. A. Reiss and G. W. Carver 283
Responses of reduced dynamical systems, adjustment of. J. H. Anderson 75
Responses of two systems, performance index based on the correlation between. B. Sarkar 6
Errata 142
Restoring system, photoelectric, for images degraded by atmospheric turbulence. W. H. Bloss, G. H. Lohnert and R. T. Schneider 292
Richalet, J., and Gimonet, B. Identification des systèmes discrets linéaires mono-variables par minimisation d'une distance de structure (Identification of discrete linear scalar systems by minimisation of a parametric norm) 547
Richalet, J., and Lecamus, F. (See Lecamus)
Ring and line focus electron beams from a glow-discharge gun. G. G. Isaacs 405
Řizek, S. Distributed RC elements with rational short-circuit matrices 458
Roberts, G. G., and Marks, L. M. Two-point boundary-value problems in theories of space-charge conduction 265
Rode, F., and Chan, S. P. Evaluation of topological formulas using digital computers 256
Errata 342
Rohan, P., Viola, M., Templar, E., and Wilcox, J. High-power radio-frequency transistor amplifier 442
Rollett, J. M., and Greenaway, P. E. Directly coupled active circulators 579
Rollett, J. M. Circulator-capacitor networks 599
Root-sensitivity invariants. Z. Kumpel 598
Rosenbrock, H. H. Generalised resultant 250
Rosenbrock, H. H. McMillan forms from system matrices 374
Rosenbrock, H. H. Relatively prime polynomial matrices 227
Rosenbrock, H. H. Some properties of relatively prime polynomial matrices 374
Rosie, A. M., Monds, F. C., and McCaughern, R. (See McCaughern)
Roska, T. Summed-sensitivity invariants and their generation 281
Errata 394
Rosman, G. Two examples of long-c.w-burst measurements on cable systems 47
Ross, R. A., Freeny, C. C., and Cleary, J. C. Bistatic scattering matrix for a finite right-circular cylinder 148
Rotor excitation of a turboalternator model under fault conditions, quadrature-axis. H. Nicholson 60
Rowe, B. Simple measurement of m.o.s.t. gain factor 437
Rozelar, A. J. W., Imre, U., and Brunton, J. D. (See Brunton)
Rudge, A. W., and Davies, D. E. N. (See Davies)
Ryan, W. D., and Madany, H. Transistor-tunnel-diode ternary-logic circuits 127
Ryan, W. D., and Magowan, J. A. (See Magowan)
Ryan, W. D., and Reid, A. M. O. S. analogue memory element 73
Ryder, A., and Krebs, P. (See Krebs)

S

S.E.C. target gain in television-camera tubes, enhancement of. D. McMullan and G. O. Towler 542
Saeks, R., Liu, R., and Leake, R. J. (See Leake)
St. Ledger, J. F., and Ash, E. A. Laser-beam modulation using grating diffraction effects. 99
Saito, T. Operation modes in mutually synchronised system 76
Salthouse, E. C., and Löberg, J. O. (See Löberg)
Salvage, B., and Beg, S. (See Beg)
Salvage, B., and Tapupere, O. Measurement of current pulses due to discharges in a gaseous cavity in solid dielectric 529
Sami, M. G., and Le Moli, G. (See Le Moli)
Sampled-data control systems with a discontinuous error signal, z transfer functions of. R. Prajoux, Y. Sevely and P. Thierry 242
Sander, K. F., and Aitken, J. E. (See Aitken)
Sarkar, B., and Bohn, E. V. (See Bohn)
Sarkar, B. Performance index based on the correlation between the responses of two systems 6
Errata 142
Sarma, P. S., and Venkateswaran, S. (See Venkateswaran)
Sasso, G., Sommerhalder, R., Wolf, P., Drangeid, K. E., Jaggi, R., Middelhoek, S., Mohr, Th., and Moser, A. (See Drangeid)
Scattered radiation, plasma-density determination from the phase shift in. A. R. Jones, B. V. Stanic and E. R. Wooding 392
Errata 470
Scattering matrix, bistatic, for a finite right-circular cylinder. R. A. Ross, C. C. Freeny and J. C. Cleary 148
Scattering model, intervalley, of the Gunn domain. V. Székely and K. Tarnay 592
Scattering parameters of the 180° hybrid ring. G. Luzzatto 254
Schmid, P. E., Henkel, D. P., and Nowak, D. J. (See Henkel)
Schneider, R. T., Bloss, W. H., and Lohnert, G. H. (See Bloss)
Schottky-barrier diodes, measurement of donor density by pulsing. J. E. Carroll 259
Schottky-barrier field effect transistor, microwave silicon. K. E. Drangeid, R. Jaggi, S. Middelhoek, Th. Mohr, A. Moser, G. Sasso, R. Sommerhalder and P. Wolf 362
Schottky diodes, Au-Si, hyperabrupt junctions in, by ion implantation. P. Brook and C. S. Whitehead 335
Schottky diodes, GaAs, with linear log I/V behaviour over eight decades of current. B. L. Smith 332
Errata 394
Schulman, R. J., and Unkauf, M. G. (See Unkauf)
Second-order equations, stability of linear, with time varying coefficients. J. A. Walker 145
Seifert, F. Helicon diagnostic of acousto-electric domains in InSb 356
Selective properties of digital filters obtained by convolution approximation. R. Vich 1
Self-sustained oscillations, existence of, in relay-type systems with hysteresis. D. Ciscato, G. Marchesini and L. Mariani 505
Sellers, J. G. and Thompson, A. Simulation of dynamic physical systems using a digital process-control computer 371
Semiconductor detector, anomalous effects in a lithium-drifted germanium. G. Walford and C. E. Doust 13
Semiconductor devices, microwave, fundamental power/frequency limitations. V. P. Kodali 311
Semiconductor-diode v.h.f. and u.h.f. noise sources. D. E. Susans 72
Semiconductor diodes, skin effect in microwave. V. P. Kodali 67
Semiconductor switches, symmetrical and asymmetrical stable modes in systems for electronic stator control of asynchronous machines by. J. D. Van Wyk 453
Errata 574
Semiconductors in the presence of a high electric field, microwave conductivity of polar. H. Kopetz and H. W. Pötzl 79
Semiconductors, piezoelectric, circuit-controlled modes of acoustoelectric oscillations in. C. W. Turner and D. R. Bryson 270
Semiconductors, waves in, with nonconstant mobility. K. Bløtekjaer 357
"Semipole" reluctance motors. P. J. Lawrenson 376
Sen Gupta, D. L., and Ferris, J. E. Effects of large parasitic loops on Alford-loop counterpoise radiation patterns 223
Sen Gupta, D. P., and Hogg, B. W. Synchronising and damping torques in a synchronous machine with 2-axis excitation control 215
Sen Mira, and Barlow, H. M. See Barlow
Sensitivity analysis in computer-aided design of linear circuits. T. B. M. Neill 316
Errata 370
Sensitivity equations, eigenfunctions and the solutions of. D. C. Reddy 262
Sensitivity to variations of component values of passive transfer-voltage ratios, bounds on magnitude of. G. Martinelli and M. Poggelli 98
Separation constants for finite gyromagnetic plasmas, behaviour of. V. Bevc 58
Septier, A., Biquard, F., and Grivet, P. (See Biquard)
Sequential machines, maximum-speed s.t.t. state assignments for. D. P. Burton and D. R. Noaks 464
Servo drives, two-phase power. D. R. Wilson 512
Seshadri, S. R. Plane waves in a magnetoionic medium 121
Sevely, Y., Thierry, P., and Prajoux, R. (See Prajoux)
Sforza, P. F. Coupling between mutually orthogonal slot antennas covered by an overdense plasma sheath 243
Sharpe, C., and Wells, F. H. (See Wells)
Shift-register connections for delayed pseudorandom binary sequences, matrix method to determine. B. Ireland and J. E. Marshall 309
Shift-register connections for delayed pseudorandom binary sequences, matrix method to determine. B. Ireland and J. E. Marshall 467
Shmoys, J. Ray tracing in the ionosphere 302
Shockley-Poisson equation, application of 2-dimensional solutions of the, to inversion layer m.o.s.e.t. devices. H. W. Loeb. R. Andrew and W. Love 352
Short-circuit matrices, rational, distributed RC elements with. S. Rizek 458
Shur, M. S., Dizhur, D. P., and Levinstein, M. E. (See Dizhur)
Shur, M. S., and Levinstein, M. E. (See Levinstein)
Sigg, H-J., and Strutt, M. J. O. Clarke components for a system of busbars with pronounced proximity effect 188
Signal-flow graph, canonical (phase-variable) form by. H. J. Weaver and R. J. Leake 351
Signal-flow graph, effects of a vanishing variable on the. H. K. Kim 501
Signal/noise-ratio comparison, experimental, of the second-order phase-locked loop and the second-order frequency-locked loop. M. G. Unkauf and R. J. Schulman 585
Silicon diodes, 1/f noise in gate-controlled planar. F. Leuenberger 280
Silicon n-i-n space-charge-limited current (s.c.l.c.) solid-state devices, evidence of transit-time effects in. S. H. Chisholm and Chuan-Sung Yeh 498
Silicon nitride, trapping levels in. E. J. M. Kendall 468
Silicon p-n abrupt junctions, numerical study of avalanche multiplication in. J. Urgell 447
Silicon planar bipolar transistors, 1/f voltage noise in. K. F. Knott 555
Silicon planar transistors, application of the reverse emitter-base breakdown and saturation of. S. G. Johnson 109
Silicon "punch-through" diode. E. B. Kuchis and G. T. Wright 35
Šiljak, D. Analytic test for absolute stability 358
Simple graphical method to determine line reflections between high-speed logic integrated circuits. M. Abdel-Latif and M. J. O. Strutt 496
Simple measurement of m.o.s.t. gain factor. B Rowe 437
Simple proof of unconditional controllability and observability. M. M. Milić 526
Simple repeater for frequency-modulated signals using transferred-electron oscillators. S. V. Judd 33
Simple theory for improving the efficiency of Gunn oscillators. P. H. Ladbrooke and J. E. Carroll 83
Simple voltage-to-frequency convertor with increased frequency range. S. Tesic 28
Simplified equivalent circuit for the noise-figure calculation of microwave transistors. W. Bächtold and M. J. O. Strutt 209
Simplified model for the domain dynamics in Gunn-effect semiconductors covered with dielectric sheets. R. Engelmann 546
Simplified procedure for the design of multi-section Chebyshev quarterwave transformers. W. B. W. Alison 331
Errata 423
Simplified quadrature network. M. H. Ackroyd 105
Errata 142
Simplified topological solutions of networks containing nullators and norators. G. S. Brayshaw 276
Errata 342
Simulation of dynamic physical systems using a digital process-control computer. J. G. Sellers and A. Thompson 371
Simulation of function with variable poles. J. D. Martin 594
Singh, A., and Gupta, K. C. (See Gupta)
Single injection, double injection and negative resistance in gold-doped high-resistivity silicon. G. T. Wright and A. F. Ibrahim 597

Sinha Roy, P. K. Iterative method of realisation of linearly separable switching functions. 118
Sinusoidal inputs, single, subharmonics produced in purely resistive networks. A. G. J. Holt and C. Nightingale 152
Skattebol, L. V. Acoustic holograms 583
Skin effect in microwave semiconductor diodes. V. P. Kodali 67
Slot antennas covered by an overdense plasma sheath, coupling between mutually orthogonal. P. F. Sforza 243
Small-hole couplers. C. G. Someda 580
Smith, B. L. GaAs Schottky diodes with linear log I/V behaviour over eight decades of current 332
Errata 394
Smith, R. B., Bramer, B., and Croft, D. G. Determination of the constants of the capacitance/voltage law of a varactor diode 274
Snapp, C. P., Stark, L. A., and Hoefflinger, B. Experimental analysis of high-efficiency avalanche-resonance pumped oscillators 595
Solid state devices, silicon n-ν-n space-charge-limited current (s.c.l.c.), evidence of transit-time effects in. S. H. Chisholm and Chuan-Sung Yeh 498
Solid-state lasers, two Q switched, synchronisation of. G. Chartier and A. Koster 119
Solid-state microwave oscillators, a.m.- and f.m.-noise characteristics of. V. P. Kodali 147
Solid-state plasma, space harmonics in a drifted. A. C. Baynham, A. D. Boardman and J. Tierney 484
Solution of antenna problems by Fourier-series expansion. H. P. Nguyen 354
Somlo, P. I., and Hollway, D. L. (See Hollway)
Some properties of relatively prime polynomial matrices. H. H. Rosenbrock 374
Some results of an electronic compensation for surface profile errors in parabolic reflectors. D. E. N. Davies and A. W. Rudge 433
Some results for an r.f. - and p.l.-modulated incoherent carrier. J. Das and S. C. Bose 48
Errata 342
Someda, C. G. Small-hole couplers 580
Sommerhalder, R., Wolf, P., Drangeid, K. E., Jaggi, R., Middelhoek, S., Mohr, Th., Moser, A., and Sasso, G. (See Drangeid)
Sona, A., Gatti, E., and Phadnis, M. (See Gatti)
Sonar, or radar, c.t.f.m., improved near-field discrimination by the use of multiplicative signal-processing. D. G. Tucker and M. J. Withers 245
Sonar systems, or radar, improvements in near-field discrimination for, by the use of separate transmitting and receiving arrays. D. E. N. Davies 383
Sound, frequency response of a distributed piezoelectric source of. R. F. Mitchell and M. Redwood 107
Space-charge conduction, two-point boundary-value problems in theories of. G. G. Roberts and L. M. Marks 265
Space-charge growth, fundamental microwave oscillations in epitaxial GaAs by control of. B. C. Taylor and S. E. Gibbs 471
Space-charge-limited diodes, noise in germanium double-injection. J. H. Liao 402
Space-charge-limited insulated-gate surface-channel transistor (s.c.l.i.g.f.e.t.). G. T. Wright 462
Space harmonics in a drifted solid-state plasma. A. C. Baynham, A. D. Boardman and J. Tierney 484
Spasov, A. Y. Calculation of the harmonic components of the voltage in hybrid circuits utilising tunnel diodes and transistors 38
Spasov, A. Y. Forced oscillations in an oscillating circuit utilising nonlinear capacitance 365
Spasov, A. Y. Parametric resonance in an oscillating circuit utilising nonlinear capacitance 264
Spectra, absorption, in axially magnetised y.i.g. rods. B. Désormière 219
Spectral-matrix factorisation. R. J. Kavanagh 527
Spectral response of a point-contact diode in the submillimetre range. E. J. S. Becklake, L. A. Cram and B. E. Prewer 601
Spherical conducting shell, electromagnetic transient response of a. J. R. Wait 576
Stability, analytic test for absolute. D. Šiljak 358
Stability criterion, Popov-like, for a class of time-varying continuous systems. J. S. Krikorian, Jun., and T. A. Bickart 344
Stability of a class of nonlinear systems. M. S. Davies 322
Stability of linear second-order equations with time-varying coefficients. J. A. Walker 145
Stability of p.c.m.-oscillator control systems. P. C. Parks and M. R. Miller 21
Stability properties of some gyrator circuits A. Antoniou 510
Errata 574
Stability theorem for linear systems with a periodic element. J. L. Willems 56
Stable broadband variable noise source for microwave radiometry. D. L. Hollway and P. I. Somlo 24
Stable s.e.c., target for television camera tubes. D. McMullan and G. O. Towler 360
Stanic, B, V., Wooding, E. R., and Jones, A. R. (See Jones)
Stark, L. A., Hoefflinger, B., and Snapp, C. P. (See Snapp)
State assignments, maximum-speed s.t.t., for sequential machines. D. P. Burton and D. R. Noaks 464
State-dependent current source stretches timer pulse widths. K. S. Mehta and M. Venugopal 531
State equations, linear, reductiom of order of. R. F. Brown 416
State-variable synthesis of integrated-circuit distributed RC transfer functions. E. B. Kozemchak and R. W. Newcomb 320
Static plant by degressive feedback and digital computer, automatic identification of non-linear. Z. Bubnicki 235
Statistical analyser, digital, for low frequencies. R. Kitai and D. Braithwaite 195
Statistical averages, new results for time averages as. J. E. Brignell 113
Statistical averages, new results for time averages as. H. E. Hanrahan 34
Statistical averages, new results for time averages as. H. E. Hanrahan 114
Stator control electronic of asynchronous machines by semiconductor switches, symmetrical and asymmetrical stable modes in systems for. J. Van Wyk 453
Errata 574
Steady-state stability of the doubly fed synchronous machine. R. D. Jackson and B. W. Phillips 18
Steele, M. C., and Califano, F. P. (See Califano)
Step recovery diode frequency multipliers, generalised efficiency curve for. P. W. C. Chilvers and K. Foster 487
Stephenson, J. M., Lawrenson, P. J., and Bowes, S. R. (See Lawrenson)
Stepping motor, phase-plane analysis of a permanent-magnet. R. F. Mathams 103
Stewart, J. A. C. Magnetic tuning of coaxial IMPATT oscillators 526
Stochastic stability of a class of discrete-time control systems, frequency conditions for the. Z. Bubnicki 200
Store-and-forward net, topology of. G. R. Nicoll 126
Stratified earth, optimisation of the ground wave over a. J. R. Wait 575
Strutt, M. J. O., and Abdel-Latif, M. (See Abdel-Latif)
Strutt, M. J. O., and Bächtold, W. (See Bächtold)
Strutt, M. J. O., and Guekos, G. (See Guekos)
Strutt, M. J. O., and Leupp, A. (See Leupp)
Strutt, M. J. O., and Sigg, H-J. (See Sigg)
Subharmonics produced in purely resistive networks with single sinusoidal inputs. A. G. J. Holt and C. Nightingale 152
Submillimetre range, spectral response of a point-contact diode in the. E. J. S. Becklake, L. A. Cram and B. E. Prewer 601
Summed-sensitivity invariants and their generation. T. Roska 281
Errata 394
Summed sensitivity of active networks. A. G. J. Holt and J. K. Fidler 385
Summed sensitivity of active RC networks. A. G. J. Holt and M. R. Lee 298
Summed sensitivity of network functions. A. G. J. Holt and J. K. Fidler 85
Superconducting cavity, frequency stability of a monotron oscillator with. F. Biquard, P. Grivet and A. Septier 143
Surface fields and near fields of a linear antenna. J. Galejs 519
Surface impedance at microwave frequencies, measurement of. R. J. King and J. Radtke 296
Surface magnetostatic waves in y. i. g. slab, efficient broadband excitation of the n = 0. P. Young 566
Surface (sound) waves by the air, damping of. G. Bradfield 95
Surface states, excess current in p-n junctions associated with. D. Esteve 305
Surface-wave launcher, coaxial-slot. J. C. Beal and W. J. Dewar 557
Surface-wave mode in dielectric-lined coaxial cables, propagation characteristics of the TM_{01}. J. E. Lewis and M. M. Z. Kharadly 228
Surface-wave propagation-constant measurements. R. G. Fitzgerrell 286
Surface wave, hybrid TEM-dual, in a coaxial cable having an electrically loaded inner conductor, possible physical explanation of the observed behaviour. H. M. Barlow 185
Surface wave, hybrid TEM-dual, in a coaxial cable, new experiments on the behaviour of the. H. M. Barlow and Mira Sen 523
Surface wave, TEM-dual, possible physical explanation of the observed behaviour of the hybrid, in a coaxial cable having an electrically loaded inner conductor. H. M. Barlow 153
Surface waves, magnetostatic, nonlinear behaviour of. N. J. Freedman and L. K. Brundle 427
Surface waves, magnetostatic, on a y.i.g. slab. L. K. Brundle and N. J. Freedman 132
Errata 182
Surutka, J. V. Low-power method of adjustment of medium-wave directional antennas 150
Susans, D. E. Semiconductor-diode v.h.f. and u.h.f. noise sources 72
Sutcliffe, H. Mean detector for slow fluctuations 97
Switching functions, linearly separable, iterative method of realisation of. P. K. Sinha Roy 118
Switching phenomenon observed in lateral p-n-p transistors. J. D. Last 201
Symbolic solution of networks by digital computer. G. Le Moli and M. G. Sami 481
Symmetrical and asymmetrical stable modes in systems for electronic stator control of asynchronous machines by semiconductor switches. J. D. Van Wyk 453
Errata 574
Synchronisation of two Q switched solid-state lasers. G. Chartier and A. Koster 119
Synchronising and damping torques in a synchronous machine with 2-axis excitation control. D. P. Sen Gupta and B. W. Hogg 215
Synchronous machine, steady-state stability of the doubly fed. R. D. Jackson and B. W. Phillips 18
Synchronous machine, synchronising and damping torques in a, with 2-axis excitation control. D. P. Sen Gupta and B. W. Hogg 215
Synthesis by partial-fraction expansion. R. J. Krueger 192
Synthesis of a multivariable 2-port using parallel and series stubs. Y. Kamp 474
Synthesis of minimal (irreducible) realisations. G. V. S. Raju 473
System identification by pseudorandom binary signals, elimination of quadratic drift errors in. H. A. Barker 255
System matrices, McMillan forms from, H. H. Rosenbrock 374
System parameters, and system response, for linear time-invariant systems, algebraic relations between. E. V. Bohn and B. Sarkar 159
System reliability which results, optimal use of partial redundancy and the. T. Klaschka 16
System response and system parameters for linear time-invariant systems, algebraic relations between. E. V. Bohn and B. Sarkar 159
Székely, V., and Tarnay, K. Buildup of Gunn domains 492
Székely, V., and Tarnay, K. Intervalley scattering model of the Gunn domain 592
Szews, A. P., Ishii, T. K., Kronenwetter, C., and Jaskolski, S. V. (See Ishii)

T

Tapupere, O., and Salvage, B. (See Salvage)
Tarnay, K., and Székely, V. (See Székely)
Taylor, B. C., and Gibbs, S. E. Fundamental microwave oscillations in epitaxial GaAs by control of space-charge growth 471
Taylor, B. C., Myers, F. A., and McStay, J. (See Myers)
Taylor-series method of inverting Laplace
TE mode, evanescent-mode resonator of pure. J. J. Hupert and J. Vigil 569
Techniques for determining the characteristics of corona pulses. S. M. Foggo and L. C. Whitcombe 284
Television-camera tubes, enhancement of s.e.c. target gain in. D. McMullan and G. O. Towler 542
Television camera tubes, stable s.e.c. target for. D. McMullan and G. O. Towler 360
TEM-dual surface wave, hybrid, in a coaxial cable having an electrically loaded inner conductor, possible physical explanation of the observed behaviour of the. H. M. Barlow 185
TEM-dual surface wave, hybrid, in a coaxial cable, new experiments on the behaviour of the. H. M. Barlow and Mira Sen 523
TEM-dual surface wave, possible physical explanation of the observed behaviour of the hybrid, in a coaxial cable having an electrically loaded inner conductor. H. M. Barlow 153
Temperature-compensated analogue-multiplier. P. Voldner and H. C. Ratz 130
Temperature-compensated f.e.t. multiplier. M. M. Abu-Zeid, H. Groendijk and A. Willemse 324
Templar, E., Wilcox, J., Rohan, P., and Viola, M. (See Rohan)
ten Hoopen, M. Transformation of time series of events by random delays 282
Ternary-logic circuits, transistor-tunnel-diode. W. D. Ryan and H. Madany 127
Ternary maps for binary functions. D. H. Green and P. W. Foulk 343
Terrain effects, modal analysis of irregular, in radio propagation and the ray interpretation. J. R. Wait 367
Tesic, S. Simple voltage-to-frequency convertor with increased frequency range 28
Test of the thermal-noise hypothesis in m.o.s.f.e.t.s. H. E. Halladay and A. Van der Ziel 366
Theoretical efficiency of the l.s.a. mode for gallium arsenide at frequencies above 10GHz. P. N. Butcher and C. J. Hearn 459
Theoretical study of the effect of temperature on X band Gunn oscillators. I. B. Bott and W. Fawcett 207

Thermal-noise hypothesis, test of the, in m.o.s.f.e.t.s. H. E. Halladay and A. Van der Ziel 366
Thermistor mount, waveguide, application of impedance measurements in an investigation of. J. A. Lane 186
Thermometer, p-n junction as an ultralinear calculable. T. C. Verster 175
Thierry, P., Prajoux, R., and Sevely, Y. (See Prajoux)
Thin-film field-emission devices, field- and photon-enhanced field emission from. S. Akram-Husain and D. Walsh 339
Thin-film transistors, removal of mobile ions from the insulator layer of. O. O. Turriff and J. Bradley 312
Thompson, A., and Sellers, J. G. (See Sellers)
Three-terminal GaAs light emitter-modulator device. F. P. Califano and M. C. Steele 411
Errata 518
Three-terminal gyrator circuits using operational amplifiers. A. Antoniou 591
Threshold improvements for phase-lock loop systems. J. J. Uhran Jun 203
Tierney, J., Baynham, A. C., and Boardman, A. D. (See Baynham)
Time averages as statistical averages, new results for. J. E. Brignell 113
Time averages as statistical averages, new results for. H. E. Hanrahan 34
Time averages as statistical averages, new results for. H. E. Hanrahan 114
Time-axis expanding network. A. G. J. Holt and C. Nightingale 319
Time-discrete networks. V. Dvořák 222
Time-discrete networks. R. J. Leake, R. Saeks and R. Liu 74
Timer pulse widths, state-dependent current source stretches. K. S. Mehta and M. Venugopal 531
Time-varying continuous systems, Popov-like stability criterion for a class of. J. S. Krikorian, Jun., and T. A. Bickart 344
Time-varying electromagnetic field, exact solution for the diffusion of a charged particle in a. F. C. Chang, N. F. Audeh and S. T. Wu 441
Time-weighted performance-index evaluation. B. D. O. Anderson 174
Tomlinson, N. R. Equivalence of single-stage and N stage optimum digital control systems 110
Topological formulas using digital computers, evaluation of. F. Rode and S. P. Chan 256
Errata 342
Topology of a store-and-forward net. Nicoll, G. R. 126
Tosser, A. Photoelectric determination of the difference between work functions of metals 168
Towards reducing errors in radar measurement of Faraday rotation. R. H. T. Bates and A. R. Jamieson 155
Towler, G. O., and McMullan, D. (See McMullan)
Transcendental, and algebraic, transmission lines, generalised patterns of nonuniformity for solvable. A. G. J. Holt and K. U. Ahmed 287
Errata 394
Transducer for shear or longitudinal-wave acoustoelectric amplifiers. G. S. Kino 206
Transducer, piezoelectric thin-film, calculation of the bandshape factor of. J. Trotel, E. Dielesaint and B. Autin 156
Transfer functions, integrated-circuit distributed RC, state-variable synthesis of. E. B. Kozemchak and R. W. Newcomb 320
Transfer functions obtained by a transform derived from the Darlington transform. G. Cartianu and I. Constantin 327
Transfer functions with quasiChebyshev-type characteristics obtained by a Darlington-derived transformation. G. Cartianu and I. Constantin 328
Transfer matrix, cascade synthesis of a multivariable. Y. Kamp and J. Neirynck 369
Transfer-voltage ratios, bounds on magnitude of sensitivity to variations of component values of passive. G. Martinelli and M. Poggelli 98
Transferred-electron oscillators, GaAs, high-bias-voltage operation of. S. Y. Narayan and A. R. Gobat 504
Transferred-electron oscillators, simple repeater for frequency-modulated signals using 33
Transformation of time series of events by random delays. M. ten Hoopen 282
Transformers, Chebyshev quarterwave, simplified procedure for the design of multisection. W. B. W. Alison 331
Errata 423
Transformers, transmission-line, optimum noncommensurate stepped. J. W. Bandler 212
Transient neutral depletion in a constricted low-pressure mercury discharge measured by ultraviolet absorption. J. E. Aitken and K. F. Sander 426
Transient response, calculation of. J. Valand 261
Transient response, electromagnetic, of a spherical conducting shell. J. R. Wait 576
Transient response, evaluation of. N. Ahmed and K. R. Rao 533
Transistor amplifier, high-power radio-frequency. P. Rohan, M. Viola, E. Templar and J. Wilcox 442
Transistor chopper, low-noise l.f. amplification using a. P. J. Baxandall 14
Transistor transit-time oscillator, efficiency of the. G. T. Wright 217
Transistor-tunnel-diode ternary-logic circuits. W. D. Ryan and H. Madany 127
Transistors, application of the reverse emitter-base breakdown and saturation of silicon planar transistors. S. G. Johnson 109
Transistors, calculation of the harmonic components of the voltage in hybrid circuits utilising tunnel diodes and. A. Y. Spasov 38
Transistors, p-n-p lateral, switching phenomenon observed in. J. D. Last 201
Transit-time effects in bulk negative-mobility amplifiers. D. Dascalu 581
Transition-matrix construction for pseudorandom binary-sequence generators. M. T. G. Hughes 417
Transit-time oscillator, 'punch-through'. G. T. Wright 543
Transmission line, dielectric-rod, portrayal of the field at the junction between a Yagi structure and a. E.-G. Neumann 295
Transmission line, hypergeometric, generalised distributions of nonuniformity of. A. G. J. Holt and K. U. Ahmed. 167
Transmission line, linear antennas in a warm plasma driven from a coaxial air-filled. D. T. Nguyen 475
Transmission-line systems, determination of pulse distortion in, having reactive terminations using the graphical method. R. Murray-Shelley 589
Transmission-line transformers, optimum noncommensurate stepped. J. W. Bandler 212
Transmission lines, algebraic and transcendental, generalised patterns of nonuniformity for solvable. A. G. J. Holt and K. U. Ahmed 287
Errata 394
Transmission lines, maximally flat approximation for noncommensurate cascaded. Y. Kamp and J. Neirynck 477
Transmission system, data, correlation-multiplex. R. Barrett and J. Karran 538
Errata 604
Transmittance en z d'asservissements échantillonnés à signal d'erreur discontinu. (z transfer functions of sampled-data control systems with a discontinuous error signal). R. Prajoux, Y. Sevely and P. Thierry 242
Transistors, and p-n junctions, diffusion capacitance of. C. D. Bulucea 559
Transistors, microwave, simplified equivalent circuit for the noise calculation of. W. Bächtold and M. J. O. Strutt 209
Transistors with cylindrical geometry, edge injection and pinch-in effect of. H.-M. Rein 553
Transit-time effects, evidence of, in silicon n-ν-n space-charge-limited current (s.c.l.c.) solid-state devices. S. H. Chisholm and Chuan-Sung Yeh 498
Trapping levels in silicon nitride. E. J. M. Kendall 468
Trees and directed trees, iterative procedure for generating. Wai-Kai Chen 516
Errata 574
Tree-generation method, efficient, suitable for computer programming. A. G. J. Holt and J. K. Fidler 183
Trees, generation of, by algebraic methods. Wai-Kai Chen 456
Triangular-and trapezium-waveform oscillators for wideband electronic control of frequency. F. H. Wells and C. Sharpe 7
Tropospheric layer, whispering-gallery modes in a. J. R. Wait 377
Trotel, J., Dieulesaint, E., and Autin, B. Calculation of the bandshape factor of a piezoelectric thin-film transducer 156
Troughton, P. High Q factor resonators in microstrip 520
Tucker, D. G., and Withers, M. J. Improved near-field discrimination by the use of multiplicative signal-processing in c.t.f.m. radar or sonar 245
Tunable active allpass sections. A. G. J. Holt and J. P. Gray 37
Tunnel diodes and transistors, calculation of the harmonic components of the voltage in hybrid circuits utilising. A. Y. Spasov 38
Tunnel-diode, transistor, ternary-logic circuits. W. D. Ryan and H. Madany 127
Turboalternator model under fault conditions, eigenvalue and control-law trajectories for. H. Nicholson 9
Turboalaternator model under fault conditions, quadrature-axis rotor excitation of. H. Nicholson 60
Turner, C. W., and Bryson, D. R. Circuit-controlled modes of acoustoelectric oscillations in piezoelectric semiconductors 270
Turriff, O. O., and Bradley, J. Removal of mobile ions from the insulator layer of thin-film transistors 312
Two applications of the matrix transformation $A = (B + I)(B - I)^{-1}$ in dynamical system theory. H. M. Power 479
Two examples of long-c.w.-burst measurements on cable systems. G. Rosman 47
Two methods of asynchronous data compression. R. McCaughern, A. M. Rosie, and F. C. Monds 363
Two-phase power servo drives. D. R. Wilson 512
Two-point boundary-value problems in theories of space-charge conduction. G. G. Roberts and L. M. Marks 265
Two stability criteria for linear systems with a periodic feedback element. J. L. Willems 55

U

U.H.F. and v.h.f. noise sources, semiconductor-diode. D. E. Susans 72
Uhran, J. J., Jun. Threshold improvements for phase-lock loop systems 203
Ultraviolet absorption, transient neutral depletion in a constricted low-pressure mercury discharge measured by. J. E. Aitken and K. F. Sander 426
Uniqueness of the impulse function of a discrete-time Markov process. G. J. Maruschock and M. H. Mickle 375
Unkauf, M. G., and Schulman, R. J. Experimental signal/noise-ratio comparison of the second-order phase-locked loop and the second-order frequency-locked loop 585
Urgell, J. Etude numerique de la multiplication par avalanche dans les jonctions p-n abruptes au silicium. (Numerical study of avalanche multiplication in silicon p-n abrupt junctions) 447
Use of a capacitive load in m.o.s. dynamic logic. P. Krebs and A. Ryder 199
Use of bistatic radar techniques to improve resolution in the vertical plane. D. E. N. Davies 170
Using the reciprocity theorem for antenna calculations. K. G. Balmain 301

V

V.H.F. and u.h.f. noise sources, semiconductor-diode. D. E. Susans 72
Vacuum breakdown at a ceramic surface in a microwave cavity. F. S. Chute and G. B. Walker 395
Valand, J. Calculation of transient response 261
Vandenplas, P. E., Peter, G., and Messiaen, A. M. (See Messiaen)
Van der Ziel, A., and Halladay, H. E. (See Halladay)
Van Looij, H. Th., and Adams, K. M. Phase-compensation in electronic gyrator circuits 430
Van Looij, H. Th., and Adams, K. M. Wideband electronic gyrator circuit 431
Van Wyk, J. D. Symmetrical and asymmetrical stable modes in systems for electronic stator control of asynchronous machines by semiconductor switches 453
Errata 574
Vanishing variable, effects of a, on the signal-flow graph. H. K. Kim 501
Varactor diode, characteristics of an electromagnetic amplifier using. J. Bajon 161
Varactor diode, determination of the constants of the capacitance/voltage law of a. R. B. Smith, B. Bramer and D. G. Croft 274
Varactor harmonic-generator chain as a pump source for a parametric amplifier. C. D. Corbey, R. Davies and B. H. Newton 397
Variable electronic allpass delay networks. R. K. P. Galpin 137
Variable-length Gunn oscillator. F. A. Myers, J. McStay and B. C. Taylor 386
Vasile, C. F., and La Rosa, R. Method of testing the quality of bars of single-crystal yttrium-iron garnet 400
Venkateswaran, S., and Sarma, P. S. Maximum available power gain of active 2-ports 278
Errata 518
Venugopal, M., and Mehta, K. S. (See Mehta)
Vernon, R. J. General theorem on symmetry-imposed decoupling of ports of a waveguide junction 586
Versatile and accurate method of group-delay measurement. R. K. P. Galpin 23
Versatile multiplier arrays. K. J. Dean 333
Verster, T. C. p-n junction as an ultralinear calculable thermometer 175
Vich, R. Selective properties of digital filters obtained by convolution approximation 1
Video frequencies, light modulation at. A. J. Fox and J. R. Mansell 12
Video records, magnetic duplication of. W. T. Frost and E. T. Hatlev 334
Vigil, J., and Hupert, J. J. (See Hupert) 569
Viola, M., Templar, E., Wilcox, J., and Rohan, P. (See Rohan)
Vogt, W. G., and Buis, G. R. (See Buis)
Vogt, W. G., and Mickle, M. H. Canonical form for deadbeat control 102
Voldner, P., and Ratz, H. C. Temperature-compensated analogue multiplier 130
Voltage divisions between nonlinear resistances with positive temperature coefficients. J. O. Löberg and E. C. Salthouse 552
Voltage gain in passive RC series-parallel 3-terminal networks. R. Nouta and K. M. Adams 276
Voltage noise, 1/f, in silicon planar bipolar transistors. K. F. Knott 555
Voltage regulation by means of chopper circuits, a.c. A. Emanuel-Eigeles and J. Appelbaum 26

Voltage-transfer-function matrix realisation using operational amplifiers. S. K. Mitra 435
Volterra-series method, accuracy of the, for nonlinear differential equations. M. Kiełkiewicz 584

W

Wait, J. R. Calculated mode conversion at the sunrise boundary in the Earth-ionosphere waveguide 131
Wait, J. R. Electromagnetic transient response of a spherical conducting shell 576
Wait, J. R. Modal analysis of irregular terrain effects in radio propagation and the ray interpretation 367
Wait, J. R. Optimisation of the ground wave over a stratified earth 575
Wait, J. R. Whispering-gallery modes in a tropospheric layer 377
Walford, G., and Doust, C. E. Anomalous effects in a lithium-drifted germanium semiconductor detector 13
Walker, G. B., and Chute, F. S. (See Chute)
Walker, J. A., Stability of linear second-order equations with time-varying coefficients. 145
Walsh, D., and Akram-Husain, S. (See Akram-Husain)
Wave equations, Lyapunov functionals for a class of. G. R. Buis and W. G. Vogt 128
Errata 236
Wave propagation, electromagnetic, in cylindrically stratified isotropic media. B. S. Westcott 323
Errata 574
Wave propagation, electromagnetic, in spherically stratified isotropic media. B. S. Westcott 572
Waveguide attenuation by resonance methods, measurement of. T. R. Bourk, M. M. Z. Kharadly and J. E. Lewis 267
Waveguide circulators, central pin tolerances in broadband 3-port. L. E. Davies 307
Waveguide circulators, latched 3-port. L. E. Davis and J. R. Bacon 490
Waveguide, earth-ionosphere, calculated mode conversion at the sunrise boundary in the. J. R. Wait 131
Waveguide filters and evanescent-mode filters, relationship between direct-coupled. G. Craven 44
Waveguide junction, general theorem on symmetry-imposed decoupling of ports of a. R. J. Vernon 586
Waveguide modes, dielectric, group velocity of. P. J. R. Laybourn 507
Waveguide problems, finite-element method for. S. Ahmed 387
Waveguide thermistor mount, application of impedance measurements in an investigation of. J. A. Lane 186
Waveguides, diaphragms in evanescent. C. K. Mok 43
Waveguides, ray interpretation of modes in curved nonuniform. L. B. Felsen and S. J. Maurer 70
Waves in semiconductors with nonconstant mobility. K. Bløtekjaer 357
Weaver, H. J., and Leake, R. J. Canonical (phase-variable) form by signal-flow graph 351
Webb, E. L. R. Dispersive filter in a control loop 13
Webb, R. J., and Ley, J. M. (See Ley)
Wedge diffraction, effect of source pattern on. L. Lewin 82
Weissenberger, S. Extended boundedness concept for the problem of Lur'e 489
Weissenberger, S. Regions of ultimate boundedness for the problem of Lur'e 381
Wells, F. H., and Sharpe, C. Triangular- and trapezium-waveform oscillators for wide-band electronic control of frequency 7
Westcott, B. S. Electromagnetic wave propagation in cylindrically stratified isotropic media 323
Errata 574
Westcott, B. S. Electromagnetic wave propagation in spherically stratified isotropic media 572
Whispering-gallery modes in a tropospheric layer. J. R. Wait 377
Whitcombe, L. C., and Foggo, S. M. (See Foggo)
Whitehead, C. S., and Brook, P. (See Brook)
Wide-range electronic tuning of a Gunn diode by an yttrium-iron garnet (y.i.g.) ferrimagnetic resonator. D. A. James 451
Wiener's model of certain nonlinear systems, comments on. N. B. Jones 565
Wilcox, J., Rohan, P., Viola, M., and Templar, E. (See Rohan)
Wilkins, B. R., and Batchelor, B. G. (See Batchelor)
Willemse, A., Abu-Zeid, M. M., and Groendijk, H. (See Abu-Zeid)
Willems, J. L. Stability theorem for linear systems with a periodic element 56
Willems, J. L. Two stability criteria for linear systems with a periodic feed-back element 55
Wilson, D. R. Two-phase power servo drives 512
Wing, P. A., and Foster, K. Interference between station identities on WISDOM 509
Wing, P. A. "Wisdom"—self-synchronising delta-modulation orthogonal-channel modulator 211
Wire calorimeter for absolute and accurate laser-power measurements. R. Nowicki 404
WISDOM, interference between station identities on. P. A. Wing and K. Foster 509
"Wisdom"—self-synchronising delta-modulation orthogonal-channel modulator. P. A. Wing 211
Wise, B. Active filters using a predistortion technique 25
Wise, B. Taylor-series method of inverting Laplace transforms 341
Wohlers, M. Real-frequency interpolation with positive-real n ports 272
Wolff, I. Magnetodynamical modes in a ferrite-filled coaxial cavity 197
Wolf, P., Drangeid, K. E., Jaggi, R., Middelhoek, S., Mohr, Th., Moser, A., Sasso, G., and Sommerhalder, R. (See Drangeid)
Wolff, D. Active RC filters with differential integrators 428
Wood, R. A., and Jones, N. B. Generalised Chebyshev lowpass filters 158
Errata 236
Wooding, E. R., Jones, A. R., and Stanic, B. V. (See Jones)
Work functions of metals, photoelectric determination of the difference between. A. Tosser 168
Wright, G. T., and Ibrahim, A. F. Single injection, double injection and negative resistance in gold-doped high-resistivity silicon 597
Wright, G. T., and Kuchis, E. B. (See Kuchis)
Wright, G. T. Efficiency of the transistor transit-time oscillator 217
Wright, G. T. 'Punch-through' transit-time oscillator 543
Wright, G. T. Space-charge-limited insulated-gate surface-channel transistor (s.c.l.i.g.f.e.t.) 462
Wu, S. T., Chang, F. C., and Audeh, N. F. (See Chang)

X

X band Gunn oscillators, theoretical study of the effect of temperature on. I. B. Bott and W. Fawcett 207
X band travelling-wave light-intensity modulator using ZnS crystals. D. C. Doughty 134
X band waveguide for higher microwave power, parallel-fed c.w. Gunn oscillators cascaded in. S. Boronski 185

Y

Y.I.G. rods, absorption spectra in axially magnetised. B. Désormière 219
Y.I.G. slab, efficient broadband excitation of the n=0 surface magnetostatic waves in. P. Young 566
Y.I.G. slab, magnetostatic surface waves on. L. K. Brundle and N. J. Freedman 132
Errata 182
Yagi structure, portrayal of the field at the junction between a, and a dielectric-rod transmission line. E.-G. Neumann 295
Yeh, Chuan-Sung, and Chisholm, S. H. (See Chisholm)
Young, P. Efficient broadband excitation of the n=0 surface magnetostatic waves in a y.i.g. slab 566
Young, R. W. Hollow-cathode discharges in mercury at low pressures 66
Yttrium-iron garnet (y.i.g.) ferrimagnetic resonator, wide-range electronic tuning of a Gunn diode by an. D. A. James 451
Yttrium-iron garnet, single-crystal, method of testing the quality of bars of. C. F. Vasile and R. La Rosa 400

Z

z transfer functions of sampled-data control systems with a discontinuous error signal. (Transmittance en z d'asservissements échantillonnés à signal d'erreur discontinu). R. Prajoux, Y. Sevely and P. Thierry 242
Zero-order hold distortion, digital precorrection for. D. P. Henkel, D. J. Nowak and P. E. Schmid 514
ZnS crystals, X band travelling-wave light-intensity modulator using. D. C. Doughty 134